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TWO YEARS AFTER GRADUATION:

RESULTS OF A SURVEY OF
1976 DOCTORAL RECIPIENTS
IN ONTARIO

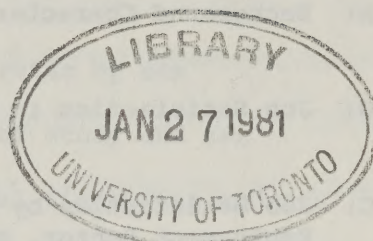
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C O N T E N T S

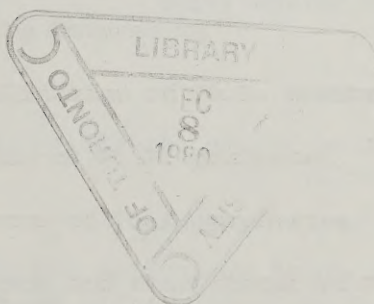
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INTRODUCTION

Job markets for university graduates vary over time. In the 1960's the market for university graduates in Canada was exceptionally good. Graduates were eagerly sought by employers, and their salaries rose more rapidly than those of other groups in the economy. But, a decade later, concern was being expressed from many quarters about the labour market experiences of the most recent university graduates. Newspapers carried tales of woe of unemployed and underemployed university graduates. Articles and books were written about over-investment in post-secondary education. Commissions, formed to assess the effects on education of declining enrolments in elementary and secondary schools, recommended reductions in the number of people being trained as teachers.

This report looks at some aspects of the labour market experiences of those graduates who obtained doctoral degrees in 1976 from universities in Ontario. It focuses on the types of jobs these graduates obtained, and the extent of their satisfaction with these jobs.

Data

Statistics Canada, in co-operation with the provincial ministries responsible for university education, conducted in late 1978 and early 1979 a national survey of 1976 doctoral

degree recipients. The questionnaire of respondents who had earned their doctoral degrees in Ontario form the data base for this study. A copy of the questionnaire is found in Appendix F and background information about the respondents is contained in Appendix A.

Structure of the Report

The report is divided into five sections. The first section looks at the labour force status of the respondents as of December, 1978. The second and third sections examine the types of jobs respondents residing in Canada held at this time; the second section concentrates on the employment of graduates in the non-university sectors, while the third section looks at their employment in the university sector. The fourth section assesses the degree of satisfaction or dissatisfaction of respondents with various aspects of their jobs. The final section presents some recommendations concerning the connection between doctoral programs and labour markets.

Principal Findings

The main empirical findings of the report may be summarized as follows:

- 1) Extremely few Ph.D. graduates were not employed.

Slightly more than 95 per cent of the respondents were

working as of December, 1978. Only 3.1 per cent were involuntarily not employed and 1.5 per cent were voluntarily without work. Almost 90 per cent of the respondents held full-time jobs. (Section 1)

- 2) Although, overall, the rate of employment of graduates was very high, humanities graduates did not fare as well as graduates of other fields of study. Less than 75 per cent of the humanities graduates held full-time jobs, while 17 per cent were employed in part-time positions. Almost 8 per cent of the humanities graduates were involuntarily without work. The reason cited most often for their unemployment was a scarcity of positions related to their discipline. (Section 1)

- 3) The employed respondents residing in Canada were almost evenly divided between the university and non-university sectors. Universities employed 53.5 per cent of the respondents. Almost 85 per cent of the graduates employed by universities held university teaching positions; the majority of the remaining graduates held post-doctoral research positions. In the non-university sector, governments were the largest employers, with almost 17 per cent of the graduates working in this sector. Industry, although

the second largest employer in the non-university sector, hired only 10.7 per cent of the graduates (Sections 2, 3)

- 4) The distribution of graduates among employment sectors was affected by their field of study. For example almost two-thirds of the humanities graduates, but only slightly more than one-quarter of the engineering graduates, were employed by universities. For the most part, graduates of social science and humanities disciplines were more likely to be employed by universities. Psychology graduates, however, represent a major exception to this trend; nearly 65 per cent of these graduates held positions outside the university sector, the majority being employed in the health care sector. (Sections 2, 3)
- 5) Positions involving primarily research or development activities accounted for about one-third of the jobs in the non-university sector; these positions were confined mainly to the government and industrial sectors, with these sectors providing 86 per cent of such positions. In the non-university sectors, science and engineering graduates were more likely to hold research or development positions. More than 60 per cent of these graduates, but less than 10 per

cent of the arts graduates worked in research or development; arts graduates tended to be administrators or consultants. (Section 2)

- 6) Despite the fact that 45 per cent of the graduates hold faculty positions, there remains a significant number who would probably move into a university teaching position given the opportunity. An examination of employment aspirations reveals that one-quarter of the respondents residing in Canada may fall into this category; in the case of humanities, life and physical science graduates, the figure exceeds one-third. And employment aspirations represented an important factor in the decisions of respondents to pursue doctoral studies. About 70 per cent claimed that their employment aspirations considerably or very considerably affected their decisions. (Section 3)
- 7) Slightly more than two-thirds of the graduates claimed that their jobs were definitely suitable for someone with their level of education. However, responses varied considerably according to the discipline and employment sector of the graduates. Only slightly more than 50 per cent of the humanities and physical science graduates considered their

employment to be definitely suitable. In contrast, about 80 per cent of education, social science, and health science graduates claimed that their jobs were definitely suitable. And, while more than 80 per cent of the university teachers felt that their jobs were definitely suitable, only 37.5 per cent of those in the non-university educational sector and 45 per cent of those in industry had similar feelings. Of particular concern is the fact that less than 20 per cent of the humanities graduates working outside the university teaching sector found their employment definitely suitable. (Appendix D)

- 8) Fewer than 10 per cent of the graduates working full-time reported earnings less than \$15,000 per year. The graduates were most likely to be earning \$20,000 to \$25,000, with 37.4 per cent reporting earnings in this range. Social science, engineering, education, and health science graduates tended to earn more than graduates of other fields. Independent of the field of study, females generally earned less than their male counterparts; the probability of a female earning less than \$15,000 was almost twice that of a male. Salaries in the health care, self-employed, and non-university educational sectors were, for the most part, higher than those found in other sectors. (Appendix E)

- 9) More than three-quarters of the graduates reported overall satisfaction with their jobs. Graduates expressed most satisfaction with the educational level of their colleagues and the challenge of their work. Least satisfaction was expressed about job security and promotion prospects. (Section 4)
- 10) Although, overall, the graduates seemed reasonably satisfied with their jobs, three groups of graduates experienced relatively low levels of job satisfaction, namely: (a) graduates employed in industry, (b) graduates employed in the university research sector, and (c) humanities and physical science graduates employed as university teachers. For graduates employed in industry, inadequate research opportunities appear to be the major reason for dissatisfaction. Graduates employed in the university research sector were concerned most about their job security, career prospects, and earnings. Contractually limited and part-time appointments caused dissatisfaction among the humanities and physical science graduates working as university teachers. (Section 4)

These results present a mixed picture. Virtually all graduates found employment (the notable exception to this is that graduates of the humanities had more difficulty finding jobs, particularly jobs that suited their education). Many graduates aspired to and obtained university appointments; there still remain, however, many graduates who would like a university appointment. A significant majority of graduates claimed that they were satisfied with their current jobs; at the same time a number of these graduates expressed concern about job security and career or promotion prospects. In short, although the graduates of 1976 have fared relatively well to date, the future looks considerably bleaker for these graduates as well as those to come.

SECTION 1

LABOUR FORCE STATUS OF PH.D. RESPONDENTS

Have the 1976 Ph.D. graduates of Ontario universities been able to obtain employment? The survey results clearly show that these graduates have been very successful in finding jobs. Table 1.1 presents employment and labour force participation rates for respondents in the Ph.D. survey, as well as the rates for persons aged 25 - 44 in Canada and Ontario¹ as of December, 1978.

More than 95% of all respondents were employed and more than 98% of all respondents belonged to the labour force. These figures indicate that the unemployment rate of graduates was about 3%.

Graduates now residing outside Canada had slightly higher employment and participation rates than graduates currently living in Canada. The employment rate for graduates residing outside Canada was in excess of 98% and their labour force participation rate was 100%.

Among respondents residing in Canada, 95.6% of the males were employed, while 91.6% of the females held jobs. This employment rate of male Ph.D. graduates was modestly greater than that of males of comparable age in Canada and Ontario.

¹ The age range 25 - 44 was selected as about 95% of the male respondents and 90% of the female respondents fell within this age group. Table A.3 shows the age distribution of respondents.

TABLE 1.1

EMPLOYMENT AND PARTICIPATION RATES BY SEX
(December 1978)

	EMPLOYMENT RATE ¹	LABOUR FORCE PARTICIPATION RATE ²
	<u>Per Cent</u>	
<u>MALES</u>		
(a) In Ph.D. Survey:		
Total (N=476)	96.2	98.9
Residing Outside Canada (N=88)	98.9	100.0
Residing In Canada (N=388)	95.6	98.7
(b) Aged 25-44 in Canada ³	90.1	95.2
(c) Aged 25-44 in Ontario ³	92.8	96.8
<u>FEMALES</u>		
(a) In Ph.D. Survey:		
Total (N=111)	91.9	96.4
Residing Outside Canada (N=16)	93.8	100.0
Residing In Canada (N=95)	91.6	95.8
(b) Aged 25-44 in Canada ³	55.3	60.1
(c) Aged 25-44 in Ontario ³	60.9	66.0

- NOTES: 1. Employment rate measures the percentage of a given population which is employed.
2. Labour force participation rate measures the percentage of a given population which is in the labour force; to be considered a member of the labour force one must be either employed or unemployed (i.e., actively seeking employment).
3. Source: Statistics Canada, The Labour Force, Cat. 71-001 (monthly)

Female respondents, however, had a substantially higher - about 50% higher - employment rate than did females of comparable age in Canada and Ontario.

Despite the rather weak performances of many national economies in the past few years, we probably should not be too surprised by the high participation and low unemployment rates of these Ph.D. graduates. Ph.D. programs require large investments by students in terms of time, foregone earnings, and out-of-pocket educational expenses. The large investment costs should provide additional incentives to Ph.D. graduates to participate in a labour force.

In assessing the unemployment rate, we should be aware that this unemployment rate refers to a point in time two years after graduation. Although some graduates may have experienced difficulties in finding jobs immediately upon graduation, we should expect that after two years have elapsed, these graduates would have adjusted their employment aspirations in order that they may secure some form of employment. The survey data indicate that, in fact, very few graduates experienced a long job search after graduation. Almost 43% of the graduates had secured a job prior to the year of graduation (i.e., prior to January 1976) and another 50% had found jobs in the year of graduation (i.e., in 1976). These latter figures may be somewhat surprising, as well as encouraging.

Labour Force Status by Discipline

Although the Ph.D. graduates as a group appear to have had little difficulty in obtaining work, experiences have been varied according to the graduates' areas of specialization in their doctoral programs. Table 1.2 shows by broad discipline categories the type of appointment (i.e., full-time or part-time) held by graduates, employment rates, and the extent to which non-employment is involuntary. Table 1.3 gives similar information, but the discipline categories of Table 1.2 have been further disaggregated.

Humanities graduates experienced somewhat lower rates of employment and higher rates of involuntary non-employment than did graduates of other disciplines. Almost 10% of the Humanities graduates were not employed, and 80% of these non-employed graduates were without work involuntarily. In comparison, only 3.5% of graduates in disciplines other than the Humanities were without work, and slightly less than 60% of these non-employed graduates were without work involuntarily. Among the Humanities graduates, History and English majors had the lowest employment rates; only 88% of the graduates in each of these disciplines were employed.

Examination of full- and part-time rates of employment reveal further differences in the labour force status of Humanities graduates as compared to graduates of other disciplines. On the one hand, less than 75% of all Humanities graduates

TABLE 1.3

LABOUR FORCE STATUS BY DOCTORAL DISCIPLINE AND SEX

DISCIPLINE	TOTAL POPULATION			PERCENT EMPLOYED			PART-TIME			FULL-TIME			PERCENT EMPLOYED			PERCENT NOT EMPLOYED		
	TOTAL			TOTAL			TOTAL			TOTAL			TOTAL			TOTAL		
	M	F	TOTAL	M	F	TOTAL	M	F	TOTAL	M	F	TOTAL	M	F	TOTAL	M	F	TOTAL
Educational Psychology	8	8	16	87.5	75.0	81.3	12.5	25.0	18.8	100.0	100.0	100.0	-	-	-	-	-	-
Educational Administration	6	3	9	100.0	66.7	88.9	-	33.3	11.1	100.0	100.0	100.0	-	-	-	-	-	-
Other Education	17	4	21	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
TOTAL IN EDUCATION	31	15	46	96.8	80.0	91.3	3.2	20.0	8.7	100.0	100.0	100.0	-	-	-	-	-	-
TOTAL IN FINE AND APP. ARTS	3	1	4	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
History	20	4	24	85.0	50.0	79.2	-	50.0	8.3	85.0	100.0	87.5	15.0	-	12.5	-	-	-
English	20	14	34	85.0	50.0	70.6	10.0	28.6	17.6	95.0	78.6	88.2	5.0	14.3	8.8	-	7.1	2.9
Philosophy	10	4	14	60.0	75.0	64.3	30.0	25.0	28.6	90.0	100.0	92.9	10.0	-	7.1	-	-	-
Other Humanities	21	13	34	76.2	76.9	76.5	14.3	23.1	17.6	90.5	100.0	94.1	4.8	-	2.9	4.8	-	2.9
TOTAL IN HUMANITIES	71	35	106	78.9	62.9	73.6	11.3	28.6	17.0	90.2	91.5	90.6	8.5	5.7	7.5	1.4	2.9	1.9
Anthropology	6	1	7	83.3	100.0	85.7	-	-	-	83.3	100.0	85.7	16.7	-	14.3	-	-	-
Business Administration	8	0	8	100.0	N.A.	100.0	-	N.A.	-	100.0	N.A.	100.0	-	N.A.	-	-	N.A.	-
Economics	16	0	16	100.0	N.A.	100.0	-	N.A.	-	100.0	N.A.	100.0	-	N.A.	-	-	N.A.	-
Geography	12	1	13	91.7	100.0	92.3	-	-	-	91.7	100.0	92.3	-	-	-	8.3	-	7.7
Political Science	16	3	19	100.0	66.7	94.7	-	33.3	5.3	100.0	100.0	100.0	-	-	-	-	-	-
Psychology	57	19	76	91.2	84.2	89.5	7.0	10.5	7.9	98.2	94.7	97.4	1.8	-	1.3	-	5.3	1.3
Sociology	17	2	19	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
Other Social Sciences	15	7	22	86.7	71.4	81.8	6.7	28.6	13.6	93.4	100.0	95.4	6.7	-	4.5	-	-	-
TOTAL IN SOCIAL SCIENCES	147	33	180	93.9	81.8	91.7	3.4	15.2	5.6	97.3	97.0	97.3	2.0	-	1.7	0.7	3.0	1.1
Agriculture	4	1	5	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
Biochemistry	4	3	7	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
Biology	9	3	12	100.0	66.7	91.7	-	-	-	100.0	66.7	91.7	-	33.3	8.3	-	-	-
Botany	8	1	9	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
Zoology	8	2	10	87.5	50.0	80.0	-	50.0	10.0	87.5	100.0	90.0	12.5	-	10.0	-	-	-
Other Agr. and Bio. Sci.	3	1	4	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
TOTAL IN AGR. AND BIO. SCI.	36	11	47	97.2	81.8	93.6	-	9.1	2.1	97.2	90.9	95.7	2.8	9.1	4.3	-	-	-
Chemical Engineering	15	2	17	100.0	-	88.2	-	-	-	100.0	-	88.2	0.0	100.0	11.8	-	-	-
Electrical Engineering	15	0	15	100.0	N.A.	100.0	-	N.A.	-	100.0	N.A.	100.0	-	N.A.	-	-	N.A.	-
Mechanical Engineering	3	2	5	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
Other Eng. and App. Sci.	22	1	23	100.0	-	95.7	-	-	-	100.0	-	95.7	-	-	-	-	100.0	4.3
TOTAL IN HEALTH	28	3	31	92.9	66.7	90.3	3.6	33.3	6.5	96.5	100.0	96.8	3.6	-	3.2	-	-	-
Computer Science	7	1	8	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
Mathematics	8	1	9	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
Chemistry	39	4	43	89.7	50.0	86.0	5.1	25.0	7.0	94.8	75.0	93.0	2.6	-	2.3	2.6	25.0	4.7
Geology	16	0	16	93.8	N.A.	93.8	-	N.A.	-	93.8	N.A.	93.8	-	N.A.	-	6.3	N.A.	6.3
Physics	25	1	26	92.0	100.0	92.3	-	-	-	92.0	100.0	92.3	4.0	-	3.8	4.0	-	3.8
Other Math and Phy. Sci.	10	1	11	100.0	100.0	100.0	-	-	-	100.0	100.0	100.0	-	-	-	-	-	-
TOTAL IN MATH AND PHY. SCI.	105	8	113	93.3	75.0	92.0	1.9	12.5	2.7	95.2	87.5	94.7	1.9	-	1.8	2.9	12.5	3.5
GRAND TOTAL	476	111	537	92.6	73.0	88.9	3.6	18.9	6.5	96.2	91.9	95.4	2.7	4.5	3.1	1.1	3.6	1.5

had full-time jobs, while for all other broad discipline categories the rate of full-time employment of graduates exceeded 90%. On the other hand, 17% of all Humanities graduates had part-time jobs, while the rate of part-time employment for graduates of other disciplines was only 4%.

Possibly one reason for these latter differences is that females constituted 33% of the Humanities graduates, while accounting for only 16% of the graduates of other disciplines. Females traditionally have had much higher rates of part-time employment than males. For example, according to Statistics Canada labour force data for December, 1978, 20% of employed Canadian females aged 25 - 44 worked part-time, while only about 1% of their male counterparts worked part-time. The Statistics Canada data also indicate that almost 80% of these part-time female employees were working part-time by choice or for personal and family reasons; less than 20% held part-time jobs because full-time work was not available.

But differences in male-female composition would not seem to entirely explain the differences among disciplines in full- and part-time rates of employment. Slightly less than 80% of male Humanities graduates had full-time jobs, as compared to 95% of male graduates from other disciplines. Similarly, while 63% of female Humanities graduates had full-time jobs, almost 78% of female graduates in other disciplines held full-time jobs. Hence, it would seem that a significant number of

Humanities graduates of both sexes working part-time are not doing so by choice; full-time employment opportunities for these graduates would appear to be fairly limited. The relatively high rate of involuntary non-employment of Humanities graduates - almost 8% - lends further support to this statement.

Non-Employment: Amount, Type, and Reasons For

Of the 587 respondents, 27 were not employed in December, 1978. Eighteen graduates, or 3% of all graduates, were involuntarily without work. The rate of non-employment of females was more than double that of males. Humanities graduates, representing only 18% of the total number of respondents, account for more than 37% of the non-employed graduates, and for more than 44% of those graduates involuntarily without work.

Table 1.4 shows by discipline the main reason a respondent gave for non-employment. One-third of the non-employed graduates stated that they were unable to find a position related to their doctoral field; six of the ten non-employed Humanities graduates gave this as their reason for non-employment. Almost a further one-third of the non-employed graduates said that they were unable to find any work. Home or household duties accounted for one-third of the non-employment of females.

TABLE 1.4

REASONS FOR NON-EMPLOYMENT
By Discipline and Sex

Discipline	MAIN REASON FOR NON-EMPLOYMENT											
	Number Not Employed			Attending To Home/ Household Duties			Unable to Find a University Position in Doctoral Field			Unable to Find a Position in Doctoral Field Outside the University		
	M	F	T	M	F	T	M	F	T	M	F	T
History	3	0	3				1	0	1			
English	1	3	4	0	1	1	1	1*	2	0	1	1
Philosophy	1	0	1							1	0	1
Other Humanities	2	0	2				1	0	1	1	0	1
Anthropology	1	0	1				1*	0	1			
Geography	1	0	1									1
Psychology	1	1	2							1	0	1
Other Social Sciences	1	0	1									1
Biology	0	1	1							0	1	1
Zoology	1	0	1									1
Chemical Engineering	0	2	2							0	2	2
Other Engineering	0	1	1	0	1	1						
Health	1	0	1						1	0	1	
Chemistry	2	1	3	0	1	1				1	0	1
Geology	1	0	1									1
Physics	2	0	2				1	0	1			1
Total	18	9	27	0	3	3	5	1	6	2	1	3

* means that respondent was residing in the United States
all other non-employed respondents were residing in Canada

Summary

The labour force status of the respondents may be summarized as follows:

1) The labour force participation rate was very high; only about 2% of the respondents did not belong to a labour force. Female graduates, when compared to other females of similar age, had an especially high participation rate.

2) The unemployment rate was very low; only about 3% of the respondents would be classified as unemployed. Most observers would consider this level of unemployment to represent full-employment, as some people would always be between jobs (i.e., experiencing frictional unemployment).

3) Graduates of the Humanities experienced substantially more involuntary non-employment than did graduates of most other disciplines; almost 8% of the Humanities graduates were involuntarily not employed, while the comparable figure for graduates of other disciplines was 2%.

4) Graduates of the Humanities tended to have a much higher rate of part-time employment than did other graduates; only 4.2% of graduates in disciplines other than the Humanities held part-time jobs, while 17% of the Humanities graduates were employed part-time.

5) Among the non-employed graduates, Humanities graduates cited not being able to find a position related to their doctoral field as the reason for their non-employment much more often than did other graduates; six of the ten non-employed Humanities graduates, but only three of the other seventeen non-employed graduates gave this as their reason.

SECTION 2

EMPLOYMENT OF PH.D. RESPONDENTS BY NON-UNIVERSITY EMPLOYERS

Traditionally, Ph.D. graduates have been employed mainly at universities. However, the declining rates of growth of enrolment and funding at universities and the relatively young work force already in place at universities may severely affect the ability of the university sector to absorb Ph.D. graduates. In such a situation, the employment opportunities outside the university sector take on increased importance for Ph.D. graduates. This section examines what types of jobs the 1976 Ph.D. respondents living in Canada currently hold outside the university sector, and what types of graduates obtained these jobs. In the next section, the academic labour market is examined.

The non-university sector currently employs 46.2 per cent of the respondents. This figure seems quite low. The popular impression has been that university positions were extremely difficult to find in the last few years. However, with more than 50 per cent of the graduates holding jobs at universities, it would seem that university hiring has been less restricted than popularly thought.

Table 2.1 shows the distribution by employment sector and sex of respondents not working at universities. Governments represented the largest employers of Ph.D. graduates outside the university sector, employing 16.8 per cent of all respondents, and 36.5 per cent of the respondents working outside the

TABLE 2.1

DISTRIBUTION OF PH.D. RESPONDENTS
IN NON-UNIVERSITY EMPLOYMENT SECTORS
(Residing in Canada)

Employment Sector	Number of Respondents			Per Cent of Respondents		
	M	F	T	M	F	T
Other Educational Level	16	8	24	4.3	9.2	5.3
Health Care	27	12	39	7.3	13.8	8.5
Government	71	6	77	19.2	6.9	16.8
Industry	47	2	49	12.7	2.3	10.7
Self-Employed	5	3	8	1.4	3.4	1.8
Other	11	3	14	3.0	3.4	3.1
Total Non-University	177	34	211	47.8	39.1	46.2

university sector. These figures should cause some concern to potential Ph.D. recipients in that current and expected government restraints on hiring may limit the employment opportunities of future Ph.D. graduates in this sector. If both universities and governments simultaneously restrict their hirings of Ph.D.'s, then the remaining sectors of the economy may be hard pressed to provide suitable employment for these future graduates.

Slightly less than 30 per cent of the 1976 Ph.D. graduates hold jobs outside the government and university sectors. Industry employed 10.7 per cent of the respondents, the health care sector 8.5 per cent, and the non-university educational sector 5.3 per cent.

The distribution of graduates among employment sectors varied somewhat according to sex. Male graduates did not find employment as frequently as the female graduates in either the non-university educational sector or health care. Their rates of employment in these two sectors were roughly one-half those of the female graduates. In contrast, the employment of male graduates in government and industry was significantly greater than that of the female graduates. The male graduates were almost three times as likely to work in government, and more than five times as likely to work in industry as their female counterparts.

Some of these differences between sexes may be explained by the different discipline patterns of the male and female graduates. For example, slightly less than 20 per cent of the employed females graduated from health, life, physical or applied science programs, while slightly more than 40 per cent of the males graduated from these programs. Or alternatively, more than 80 per cent of the employed females graduated from education, humanities or social science programs, while less than 60 per cent of the males specialized in these areas. Given these discipline patterns, one would expect male graduates to be employed relatively more in industry and relatively less in the non-university educational sector than the female graduates. Societal attitudes about the "proper" occupations for males and females may be one factor affecting the selection of fields of study.

The Non-University Educational Sector

The non-university educational sector employed relatively few Ph.D. graduates. Only 24, or 5.3 per cent of the employed graduates worked in this sector. Slightly more than one-half of the jobs involved primarily teaching; graduates from ten disciplines held the thirteen teaching jobs. One-sixth of the jobs involved consulting activities primarily; the four consulting jobs were filled by psychology graduates. Administrative positions accounted for one-eighth of the jobs; two of the three administrative positions were held by educational administration graduates. One-third of all jobs were held by psychology or

educational psychology graduates. However, in relative terms, educational administration graduates were in greatest demand; 37.5 per cent of the respondents graduating in educational administration worked in this sector.

Table 2.2 gives the distribution of graduates in the non-university educational sector by discipline and primary work activity.

The Health Care Sector

The health care sector, in which 8.5 per cent of the employed respondents worked, hired mainly psychology and educational psychology graduates. Almost 75 per cent of the jobs in this sector were filled by graduates from these two disciplines; nearly 40 per cent of employed psychology and 20 per cent of employed educational psychology graduates worked in the health care sector. Of the identifiable work activities, consulting was the primary activity in 23.1 per cent of the jobs, research in 20.5 per cent, and administration in 15.4 per cent. Psychologists occupied 88.9 per cent of the consulting and two-thirds of the administrative positions, while science graduates (e.g. life, applied, health, and physical) filled 50 per cent of the research positions.

Table 2.3 gives the distribution of graduates in the health care sector by discipline and primary work activity.

TABLE 2.2

DISTRIBUTION OF GRADUATES IN NON-UNIVERSITY
EDUCATIONAL SECTOR BY DISCIPLINE AND
PRIMARY WORK ACTIVITY

(Residing in Canada)

DISCIPLINE	PRIMARY WORK ACTIVITY						PER CENT OF DISCIPLINE EMPLOYED IN NON-UNIVERSITY EDUCATIONAL SECTOR
	Teaching No. Col. %	Administration No. Col. %	Consulting No. Col. %	Other No. Col. %	Total No. Col. %		
Educational Psychology	1 7.7	0 0.0	0 0.0	1 25.0	2 8.3	13.3	
Educational Administration	1 7.7	2 66.7	0 0.0	0 0.0	3 12.5	37.4	
English	2 15.4	1 33.3	0 0.0	0 0.0	3 12.5	13.0	
Philosophy	0 0.0	0 0.0	0 0.0	1 25.0	1 4.2	11.1	
Other Humanities	2 15.4	0 0.0	0 0.0	1 25.0	3 12.5	12.5	
Political Science	1 7.7	0 0.0	0 0.0	0 0.0	1 4.2	5.6	
Psychology	1 7.7	0 0.0	4 100.0	1 25.0	6 25.0	9.0	
Biology	1 7.7	0 0.0	0 0.0	0 0.0	1 4.2	12.5	
Chemical Engineering	1 7.7	0 0.0	0 0.0	0 0.0	1 4.2	9.1	
Mathematics	1 7.7	0 0.0	0 0.0	0 0.0	1 4.2	20.0	
Chemistry	2 15.4	0 0.0	0 0.0	0 0.0	2 8.3	5.9	
TOTAL	13 100.0	3 100.0	4 100.0	4 100.0	24 100.0	5.3	
ROW %	54.2	12.5	16.7	16.7	100.0		

DISTRIBUTION OF GRADUATES IN HEALTH CARE
SECTOR BY DISCIPLINE AND PRIMARY WORK ACTIVITY

(Residing in Canada)

DISCIPLINE	PRIMARY WORK ACTIVITY												PER CENT OF DISCIPLINE EMPLOYED IN HEALTH CARE		
	Teaching No.	Col. %	Research No.	Col. %	Adminis- tration No.	Col. %	Consulting No.	Col. %	Computer Applications No.	Col. %	Other No.	Col. %		Total No.	Col. %
Ed. Psy.	0	0.0	1	12.5	1	16.7	0	0.0	0	0.0	1	7.1	3	7.7	20.0
Other Ed.	0	0.0	0	0.0	1	16.7	1	11.1	0	0.0	0	0.0	2	5.1	9.5
Psychology	1	100.0	2	25.0	4	66.7	8	88.9	0	0.0	11	78.6	26	66.7	38.8
Sociology	0	0.0	1	12.5	0	0.0	0	0.0	0	0.0	0	0.0	1	2.6	5.6
Biochemistry	0	0.0	1	12.5	0	0.0	0	0.0	0	0.0	0	0.0	1	2.6	50.0
Electrical Eng.	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	1	2.6	10.0
Other Eng.	0	0.0	1	12.5	0	0.0	0	0.0	0	0.0	0	0.0	1	2.6	6.3
Health Sciences	0	0.0	1	12.5	0	0.0	0	0.0	0	0.0	2	14.3	3	7.7	15.0
Chemistry	0	0.0	1	12.5	0	0.0	0	0.0	0	0.0	0	0.0	1	2.6	2.9
Total Row %	1	100.0	8	100.0	6	100.0	9	100.0	1	100.0	14	100.0	39	100.0	8.5
		2.6		20.5		15.4		23.1		2.6		35.9		100.0	

The Government Sector

Government, the largest employer of Ph.D. graduates outside the university sector, offered the graduates work mainly in research and development. Research and development positions accounted for 51.9 per cent of the jobs in the government sector. Another 15.6 per cent of the jobs were administrative in nature, and 13 per cent primarily involved consulting.

Graduates in the social and physical sciences each held 28.6 per cent of the government positions. Economics, psychology, chemistry, geology, and physics graduates were most frequently hired from the social and physical science fields. Graduates in the life sciences filled 14.3 per cent of the government jobs; biologists were most frequently hired from this field. Engineers held 10.4 per cent of the government jobs and graduates in education and humanities each occupied less than 10 per cent of the jobs.

Ninety per cent of the research and development positions were held by science graduates (e.g. life, applied, health and physical). Two-thirds of the administrative positions and one-half of the consulting jobs were filled by social science graduates.

In relative terms, life science graduates were in greatest demand. Almost 50 per cent of the employed respondents graduating from a life science program worked for government.

Although only 13.5 per cent of the employed social science graduates worked in government, almost 44 per cent of the economics graduates were employed in this sector.

Table 2.4 gives the distribution of graduates in the government sector by discipline and primary work activity.

Industry

The industrial sector, employing 10.7 per cent of the respondents, hired mainly engineers and graduates of physical science programs. Three-quarters of the graduates employed in this sector had either a doctorate in engineering or the physical sciences. Nearly two-thirds of the employed chemical engineering graduates and one-third of the employed chemistry graduates worked in industry. And for engineering as a whole, 45 per cent of the employed graduates held jobs in industry. Almost 50 per cent of the jobs involved primarily either research or development; administration was the primary work activity in 18 per cent of the jobs, and consulting was the main activity in another 12 per cent of the jobs.

Table 2.5 gives the distribution of graduates in industry by discipline and primary work activity.

DISTRIBUTION OF GRADUATES IN GOVERNMENT SECTOR
BY DISCIPLINE AND PRIMARY WORK ACTIVITY

(Residing in Canada)

DISCIPLINE	PRIMARY WORK ACTIVITY										PER CENT OF DISCIPLINE EMPLOYED IN GOVERNMENT	
	Teaching No. Col. %	Research No. Col. %	Development No. Col. %	Adminis- tration No. Col. %	Technical Writing No. Col. %	Statistical Work No. Col. %	Consulting No. Col. %	Computer Applications No. Col. %	Other No. Col. %	Total No. Col. %		
Ed. Psy				1 8.3						1 8.3		6.7
Other Ed.							1 10.0		2 28.6	3 3.9		14.3
History				1 8.3			1 10.0		1 14.3	3 3.9		15.8
Philosophy				1 8.3					1 14.3	2 2.6		22.2
Other Hum.									1 14.3	1 1.3		4.2
Economics		2 5.6		2 16.7		2 100.0	1 10.0			7 9.1		43.8
Geography				1 8.3						1 1.3		9.1
Political Science		1 2.8								1 1.3		5.6
Sociology				2 16.7						2 2.6		11.1
Psychology	1 50.0											
Other Social Sci.		1 2.8		3 25.0			3 30.0		2 28.6	6 7.8		9.0
Agriculture	1 50.0	1 2.8					1 10.0			5 6.5		26.3
Biochemistry		1 2.8								2 2.6		66.7
Biology		5 13.9								1 1.3		50.0
Botany		2 5.6								5 6.5		62.5
Zoology		1 2.8								2 2.6		40.0
Chemical Engineering			1 25.0							1 1.3		25.0
Electrical Engineering		1 2.8	1 25.0		1 50.0					1 1.3		9.1
Mechanical Engineering		3 8.3								3 3.9		30.0
Other Eng. and App. Sci.					1 50.0					3 3.9		60.0
Health Sciences		4 11.1								1 1.3		6.3
Chemistry		4 11.1	2 50.0							4 5.2		20.0
Geology		6 16.7					1 10.0			6 7.8		17.6
Physics		3 8.3		1 8.3						7 9.1		53.8
Other Math & Phy. Sci.		1 2.8						2 100.0		6 7.8		26.1
TOTAL	2 100.0	36 100.0	4 100.0	12 100.0	2 100.0	2 100.0	10 100.0	2 100.0	7 100.0	77 100.0		16.8
ROW %	2.6	16.8	5.2	15.6	2.6	2.6	13.0	2.6	9.1	100.0		

TABLE 2.5

DISTRIBUTION OF GRADUATES IN INDUSTRY
BY DISCIPLINE AND PRIMARY WORK ACTIVITY
(Residing in Canada)

DISCIPLINE	PRIMARY WORK ACTIVITY								PER CENT OF DISCIPLINE EMPLOYED IN INDUSTRY
	Teaching No. Col. %	Research No. Col. %	Development No. Col. %	Adminis- tration No. Col. %	Consulting No. Col. %	Computer Applications No. Col. %	Other No. Col. %	Total No. Col. %	
English			1 6.3					1 2.0	4.3
History				1 11.1				1 2.0	5.3
Other Humanities							2 28.6	2 4.1	8.3
Business Administration							1 14.3	1 2.0	12.5
Psychology	1 100.0				3 50.0		1 14.3	5 10.2	7.5
Agriculture				1 11.1				1 2.0	33.3
Chemical Engineering			3 18.8	2 22.2		1 33.3	1 14.3	7 14.3	63.6
Electrical Engineering		1 14.3	1 6.3	1 11.1		1 33.3		4 8.2	40.0
Other Eng. & App. Sci.		2 28.6	4 25.0		2 33.3			8 16.3	50.0
Health Sciences				1 11.1				1 2.0	5.0
Chemistry		3 42.9	5 31.3	1 11.1		1 33.3	1 14.3	11 22.4	32.4
Physics		1 14.3	1 6.3	1 11.1	1 16.7			4 8.2	17.4
Geology				1 11.1			1 14.3	2 4.1	15.4
Other Math & Phy. Sci.			1 6.3					1 2.0	14.3
Total	1 100.0	7 100.0	16 100.0	9 100.0	6 100.0	3 100.0	7 100.0	49 100.0	10.7
Row %	2.0	14.3	32.7	18.4	12.2	6.1	14.3	100.0	

Self-Employed and Other

Self-employed graduates constituted 1.8 per cent of the employed respondents; graduates employed in the "other" sector represented another 3 per cent of the employed respondents. The self-employed graduates worked as writers (1), musicians (1), consultants (2), lawyers (1), and presidents of engineering firms (2). Eleven of the fourteen graduates working in the "other" sector were employed at universities. These graduates worked as university librarians (2), university administrators (5), editors for scholarly publications (1), computer programmers (1) and counsellors (2). The remaining three graduates in the "other" sector were ministers.

SUMMARY

The main findings regarding employment of the Ph.D. respondents in the non-university sectors are:

- 1) Slightly less than 50 per cent of the employed respondents worked in the non-university employment sectors. Governments and industry were the two largest employers, with governments employing more than one-third and industry almost one-quarter of the respondents working outside the university sector. (See Tables 2.6 and 2.7 which follow.)
- 2) Research was the primary work activity most often cited by graduates working in the non-university sectors. Research was the primary activity in almost one-quarter of the non-university jobs. And, if one treats development activities as applied research, then more than one-third of the respondents in the non-university sectors were working in research positions. (See Table 2.7.)
- 3) The two most common types of jobs held by graduates not working in universities were research jobs with governments and development positions in industry. Seventeen per cent of the non-university jobs were research positions in government, and 7.6 per cent were development positions in industry. (See Table 2.7.)

TABLE 2.6

PER CENT OF FIELD OF STUDY
EMPLOYED OUTSIDE UNIVERSITY SECTOR

(Residing in Canada)

<u>FIELD OF STUDY</u>	<u>PER CENT OF EMPLOYED GRADUATES</u>
Education	45.5
Fine and Applied Arts	0.0
Humanities	34.7
Social Sciences	39.9
Agriculture and Biological Sciences	60.9
Engineering	73.8
Health Sciences	40.0
Mathematics and Physical Sciences	54.0
TOTAL	46.2

TABLE 2.7

DISTRIBUTION OF JOBS HELD BY
RESPONDENTS IN NON-UNIVERSITY
SECTORS BY PRIMARY ACTIVITY

(Residing in Canada)

EMPLOYMENT SECTOR												
PRIMARY ACTIVITY	Other Educational Level		Health Care		Government		Industry		Self-Employed And Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Teaching	13	6.2	1	0.5	2	0.9	1	0.5	2	0.9	19	9.0
Research	0	0.0	8	3.8	36	17.1	7	3.3	1	0.5	52	24.6
Development	0	0.0	0	0.0	4	1.9	16	7.6	1	0.5	21	10.0
Administration	3	1.4	6	2.8	12	5.7	9	4.3	8	3.8	38	18.0
Report and Technical Writing	0	0.0	0	0.0	2	0.9	0	0.0	1	0.5	3	1.4
Statistical Work	0	0.0	0	0.0	2	0.9	0	0.0	1	0.5	3	1.4
Consulting	4	1.9	9	4.3	10	4.7	6	2.8	1	0.5	30	14.2
Computer Applications	0	0.0	1	0.5	2	0.9	3	1.4	2	0.9	8	3.8
Other	4	1.9	14	6.6	7	3.3	7	3.3	5	2.4	37	17.5
TOTAL	24	11.4	39	18.5	77	36.5	49	23.2	22	10.4	211	100.0

- 4) There was considerable variance among fields of study in the proportion of graduates working outside the university sector. For example, almost 75 per cent of the graduates in engineering held jobs outside the university sector, while less than 40 per cent of the graduates in humanities and social sciences were employed in the non-university sectors (See Table 2.6).

- 5) Field of study affected not only the likelihood of working outside the university sector, but also the likelihood of working within a particular non-university employment sector. More than 75 per cent of the life sciences graduates working outside the university sector were employed by governments; in contrast, only 20 per cent of the education graduates not working at universities were employed by governments. And, while more than 60 per cent of the engineering graduates working outside the university sector held jobs in industry, the comparable figure for graduates in education, the social sciences, and the life sciences was less than 10 per cent. Social science graduates had a relatively higher employment rate in the health care sector than did graduates from other fields of study; however, although slightly more than 40 per cent of the social science graduates employed outside the university sector were working in the health care sector, this relatively large percentage is mainly the

result of the large number of psychology graduates employed in the health care sector. Graduates of other disciplines within the social science field tended to be employed mainly by governments. (See Table 2.8 which follows.)

- 6) The primary work activity of respondents employed in non-university sectors was affected also by field of study. Only 9 per cent of education, humanities, and social science graduates were involved primarily in research or development activities, while 63 per cent of the life, applied, health, and physical science graduates held jobs which mainly involved these activities. The arts graduates were more likely to hold administrative or consulting positions; one in four held administrative positions and about one in five worked as consultants. (See Table 2.9 which follows.)

TABLE 2.8

DISTRIBUTION OF RESPONDENTS
IN NON-UNIVERSITY SECTORS
BY FIELD OF STUDY

(Residing in Canada)

FIELD OF STUDY	EMPLOYMENT SECTOR											
	Other Educational Level		Health Care		Government		Industry		Self-Employed And Other		Total	
	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %	No.	Row %
Education	5	25.0	5	25.0	4	20.0	0	0.0	6	30.0	20	9.5
Fine and Applied Arts	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Humanities	7	26.9	0	0.0	6	23.1	4	15.4	9	34.6	26	12.3
Social Sciences	7	10.8	27	41.5	22	33.8	6	9.2	3	4.6	65	30.8
Agriculture and Biological Sci.	1	7.1	1	7.1	11	78.6	1	7.1	0	0.0	14	6.6
Engineering	1	3.2	2	6.5	8	25.8	19	61.3	1	3.2	31	14.7
Health Sciences	0	0.0	3	37.5	4	50.0	1	12.5	0	0.0	8	3.8
Mathematics and Physical Sciences	3	6.4	1	2.1	22	46.8	18	38.3	3	6.4	47	22.3
TOTAL	24	11.4	39	18.5	77	36.5	49	23.2	22	10.4	211	100.0

TABLE 2.9
DISTRIBUTION OF RESPONDENTS EMPLOYED OUTSIDE
UNIVERSITY SECTOR BY FIELD OF STUDY AND
PRIMARY WORK ACTIVITY

(Residing in Canada)

PRIMARY ACTIVITY	FIELD OF STUDY												Total			
	Education		Humanities		Social Sciences		Agriculture & Biological Sciences		Engineering Sciences		Health Sciences				Mathematics and Physical Sciences	
	No.	Col. %	No.	Col. %	No.	Col. %	No.	Col. %	No.	Col. %	No.	Col. %			No.	Col. %
Teaching	3	15.0	4	15.4	5	7.7	2	14.3	1	3.2	0	0.0	4	8.5	19	9.0
Research	1	5.0	0	0.0	8	12.3	11	78.6	8	25.8	5	62.5	19	40.4	52	24.6
Development	0	0.0	1	3.8	0	0.0	0	0.0	10	32.3	0	0.0	10	21.3	21	10.0
Administration	8	40.0	8	30.8	12	18.5	1	7.1	4	12.9	1	12.5	4	8.5	38	18.0
Report and Technical Writing	0	0.0	1	3.8	0	0.0	0	0.0	2	6.5	0	0.0	0	0.0	3	1.4
Statistical Work	0	0.0	0	0.0	3	4.6	0	0.0	0	0.0	0	0.0	0	0.0	3	1.4
Consulting	2	10.0	1	3.8	21	32.3	0	0.0	2	6.5	0	0.0	4	8.5	30	14.2
Computer Applications	1	5.0	0	0.0	0	0.0	0	0.0	3	9.7	0	0.0	4	8.5	8	3.8
Other	5	25.0	11	42.3	16	24.6	0	0.0	1	3.2	2	25.0	2	4.3	37	17.5
TOTAL	20	100.0	26	100.0	65	100.0	14	100.0	31	100.0	8	100.0	47	100.0	211	100.0

SECTION 3

EMPLOYMENT AT UNIVERSITIES

Forty-five per cent of the employed respondents hold teaching positions at universities and another 8.5 per cent hold research positions at universities. In view of these figures and the employment aspirations of the respondents, one can not underestimate the importance of employment opportunities in the university sector, to Ph.D. graduates. Table 3.1 indicates by discipline the percentage of graduates employed by universities; Table 3.2 shows the employment aspirations of the respondents upon entry into doctoral programmes. Although employment in the university sector appears to be relatively high, it must be observed that two-thirds of all respondents aspired to a university appointment, when they began their doctoral studies. Thus, despite the high rate of employment in universities, there remains a surplus.

Table 3.3 attempts to quantify the surplus by field of study. The questionnaire asks respondents if they aspire or aspired to a university appointment. No distinction is made by the questionnaire between a teaching and a research appointment. In computing the surpluses shown in Table 3.3 it is assumed that those respondents aspiring to a university appointment were, in fact, interested in a teaching position. This assumption seems reasonable in view of the fact that persons employed by the research sector hold temporary and

TABLE 3.1
EMPLOYMENT OF PH.D. RESPONDENTS AT UNIVERSITIES BY DISCIPLINE
(Residing in Canada)

DISCIPLINES FOR WHICH EMPLOYMENT IN UNIVERSITY SECTOR IS RELATIVELY LOW (i.e., Less Than 33.3 Per Cent of Graduates)				DISCIPLINES FOR WHICH EMPLOYMENT IN UNIVERSITY SECTOR IS MODERATE (i.e., 33.3 to 66.7 Per Cent of Graduates)				DISCIPLINES FOR WHICH EMPLOYMENT IN UNIVERSITY SECTOR IS RELATIVELY HIGH (i.e., More than 66.7 Per Cent of Graduates)			
Discipline	Number in Discipline Who Are Employed	Number Employed At University	Per Cent of Employed Graduates	Discipline	Number in Discipline Who Are Employed	Number Employed At University	Per Cent of Employed Graduates	Discipline	Number in Discipline Who Are Employed	Number Employed At University	Per Cent of Employed Graduates
Agriculture	3	0	0.0	Psychology	67	24	35.8	History	19	14	73.7
Biochemistry	2	0	0.0	Other Eng. & App. Sci.	16	6	37.5	Zoology	4	3	75.0
Chem. Eng.	11	2	18.2	Chemistry	34	14	41.2	English	23	18	78.3
Mech. Eng.	5	1	20.0	Philosophy	9	4	44.4	Mathematics	5	4	80.0
Elect. Eng.	10	2	20.0	Ed. Psy.	15	7	46.7	Political Sci.	18	15	83.3
Biology	8	2	25.0	Physics	23	11	47.8	Sociology	18	15	83.3
Other Math & Phy. Sci.	7	2	28.6	Educ. Admin.	8	4	50.0	Bus. Admin.	8	7	87.5
Geology	13	4	30.8	Other Humanities	24	13	54.2	Geography	11	10	90.9
				Economics	16	9	56.3	Fine & Applied Arts	3	3	100.0
				Botany	5	3	60.0	Anthropology	6	6	100.0
				Health Sci.	20	12	60.0	Other Agric. & Bio. Sci.	1	1	100.0
				Other Educ.	21	13	61.9	Computer Sci.	5	5	100.0
				Other Soc. Sci.	19	12	63.2				

TABLE 3.2

EMPLOYMENT ASPIRATIONS OF RESPONDENTS* ON
ENTRY TO DOCTORAL PROGRAM BY FIELD OF STUDY

(Residing in Canada)

FIELD OF STUDY	EMPLOYMENT ASPIRATIONS									
	UNIVERSITY APPOINTMENT		RESEARCH APPOINTMENT OUTSIDE UNIVERSITY		OTHER APPOINTMENT OUTSIDE UNIVERSITY		NO SPECIFIC ASPIRATIONS		NO RESPONSE	
	#	%	#	%	#	%	#	%	#	%
Education	28	63.6	1	2.3	7	15.9	7	15.9	1	2.3
Fine and Applied Arts	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Humanities	77	91.7	0	0.0	1	1.2	6	7.1	0	0.0
Social Sciences	119	70.8	5	3.0	28	16.7	15	8.9	1	0.6
Life Sciences	13	52.0	10	40.0	0	0.0	2	8.0	0	0.0
Engineering	13	30.2	17	39.5	7	16.3	6	13.9	0	0.0
Health Sciences	12	57.1	5	23.8	2	9.5	2	9.5	0	0.0
Physical Sciences	54	58.1	24	25.8	4	4.3	11	11.8	0	0.0
TOTAL	319	66.3	62	12.9	49	10.2	49	10.2	2	0.4

*Includes respondents residing in Canada
who are not currently employed

TABLE 3.3

SURPLUS OF UNIVERSITY TEACHERS
BY FIELD OF STUDY
(Residing in Canada)

(1)	(2)	(3)	(4)	(5)	(6)
FIELD OF STUDY	ORIGINAL AND CURRENT EMPLOYMENT ASPIRATION EQUAL UNIVERSITY APPOINTMENT	ORIGINAL EMPLOYMENT ASPIRATION WAS UNI- VERSITY APPOINTMENT BUT CURRENT IS NOT OWING TO SCARCITY OF JOBS	ORIGINAL EMPLOYMENT ASPIRATION WAS NOT UNIVERSITY APPOINTMENT BUT CURRENT IS UNIVERSITY APPOINTMENT	SURPLUS (2 + 3 + 4)	SURPLUS AS PER CENT OF FIELD RESIDING IN CANADA
	-- (Number of Respondents) --				
Education	7	1	4	12	27.3 %
Humanities	12	16	0	28	32.9 %
Social Sciences	11	14	4	29	17.2 %
Life Sciences	6	3	2	11	44.0 %
Engineering	5	1	1	7	16.3 %
Health Sciences	4	0	0	4	20.0 %
Physical Sciences	15	15	2	32	34.4 %
TOTAL	60	50	13	123	25.5 %

relatively low-paying positions. Given this assumption, we find that overall one-quarter of the respondents would be considered to represent an excess supply of university faculty. In absolute terms, graduates in the physical and social sciences, as well as the humanities, represent the greatest surplus.

If employment opportunities in universities decline in the future, the question remains, will future doctoral candidates add significantly to the surplus. It is possible that enrolment in Ph.D. programmes will decrease substantially, and thus retard the growth of the surplus. Table 3.4 indicates that more than 75 per cent of those respondents aspiring to a university appointment considered their employment aspirations as having "very" or "considerable" influence on their decision to enter a doctoral programme. This being the case, many potential entrants to Ph.D. programmes may decide against enrolling. In addition, the ability of a doctoral candidate to finance his studies may be severely affected by reduced employment opportunities at universities. As Table 3.5 indicates, almost 45 per cent of those currently employed in university teaching positions held full-time teaching positions at least two years prior to graduation.

It is possible, however, that potential entrants will aspire, to a lesser extent, to university appointments. If

TABLE 3.4

EXTENT TO WHICH EMPLOYMENT ASPIRATIONS
INFLUENCED DECISION TO PURSUE A DOCTORAL DEGREE
(Residing in Canada)

EMPLOYMENT ASPIRATION ON ENTRY TO DOCTORAL PROGRAM	EXTENT OF INFLUENCE									
	VERY INFLUENTIAL #	CONSIDERABLE INFLUENCE	SOME INFLUENCE	NOT AT ALL		NO RESPONSE				
University Appointment	164	51.4	82	25.7	39	12.2	15	4.7	19	6.0
Research Appointment Outside University	26	41.9	14	22.6	14	22.6	7	11.3	1	1.6
Other Appointment Outside University	21	42.9	11	22.4	7	14.3	8	16.3	2	4.1
No Specific Aspirations	10	20.4	6	12.2	13	26.5	19	38.8	1	2.0
TOTAL	221	46.1	113	23.6	73	15.2	49	10.2	23	4.8

TABLE 3.5

TEACHING EXPERIENCE OF CURRENT
UNIVERSITY FACULTY PRIOR TO
OBTAINING DOCTORAL DEGREE

(Residing in Canada)

FIELD OF STUDY	START DATE OF FIRST FULL-TIME POSITION IN UNIVERSITY TEACHING PRIOR TO OBTAINING DOCTORAL DEGREE						NO FULL-TIME TEACHING EXPERIENCE PRIOR TO OBTAINING DOCTORATE					
	Pre-1965		1965-1969		1970-1974		1975		1976			
	#	%	#	%	#	%	#	%	#	%		
Education	0	0.0	2	10.5	4	21.1	2	10.5	0	0.0	11	57.9
Fine Arts	0	0.0	1	33.3	1	33.3	0	0.0	0	0.0	1	33.3
Humanities	2	4.3	6	12.8	16	34.0	2	4.3	0	0.0	21	48.8
Social Sciences	2	2.2	10	10.9	33	35.9	11	12.0	4	4.3	32	34.8
Life Sciences	0	0.0	0	0.0	0	0.0	2	50.0	0	0.0	2	50.0
Engineering	0	0.0	1	12.5	3	37.5	0	0.0	0	0.0	4	50.0
Health Sciences	0	0.0	3	33.3	0	0.0	0	0.0	0	0.0	6	67.3
Physical Sciences	1	4.0	2	8.0	6	24.0	2	8.0	2	8.0	12	48.0
TOTAL	5	2.4	25	12.1	63	30.4	19	9.2	6	2.9	89	43.0

this is the case, although enrolments may not decline significantly, and the faculty surplus may not increase substantially, other employment sectors will be required to absorb a greater proportion of the Ph.D. graduates, and, as the following section points out, many graduates employed outside the university sector experience less job satisfaction.

Either scenario bodes poorly for the disciplines in the humanities. Declining enrolments in Ph.D. programmes, or adjustments in employment aspirations of Ph.D. graduates will no doubt affect humanities programmes more adversely than other programmes. To maintain a reasonable balance among the disciplines, it may be necessary to consider special subsidies to the humanities.

SECTION 4

JOB SATISFACTION

Three of every four respondents were either satisfied or very satisfied with the overall conditions of their employment. Considerable variability in levels of satisfaction did exist, however, among employment sectors, work activities, and fields of study.

In four employment sectors, namely, university teaching, other educational levels, government, and self-employed or "other", 80 per cent or more of the respondents employed in each of these sectors expressed satisfaction with their jobs. In industry, however, the comparable figure was only slightly greater than 60 per cent. And in the university research and health care sectors, about 70 per cent of the respondents indicated general satisfaction with their jobs.

Among the primary work activities, respondents holding teaching or administrative positions were most satisfied. Slightly more than 80 per cent of the respondents involved primarily in either of these activities were satisfied with their positions. Although more than 75 per cent of the respondents holding research or development positions were satisfied with their jobs, the level of satisfaction varied greatly among employment sectors. More than 85 per cent of the respondents with research or development positions in the university teaching or government employment sector claimed to be generally satisfied; in contrast, only 52 per cent of the respondents with such

positions in industry and slightly less than 70 per cent of the respondents in the university research sector expressed overall satisfaction.

In excess of 80 per cent of the health science, education and social science graduates expressed overall satisfaction with their jobs. In contrast, about 70 per cent of the humanities, engineering and physical science graduates indicated general satisfaction. Although humanities graduates working in the university teaching sector were somewhat more satisfied than their counterparts in the non-university sectors, even their level of satisfaction in the university teaching sector was lower than that of graduates from most other disciplines working in this sector. Only slightly more than 70 per cent of the humanities graduates employed in the university teaching sector claimed to be satisfied with their jobs; comparable figures for education and social science graduates were 100 and 86 per cent respectively. Graduates in the physical sciences also expressed some dissatisfaction with the university teaching sector, as well as the industrial sector. In the former, 72 per cent indicated general satisfaction, while in the latter only 56 per cent claimed to be satisfied. And in the case of engineering graduates, slightly less than 70 per cent of those employed by industry, the largest employer of engineers, expressed overall satisfaction with their jobs.

TABLE 4.1

OVERALL JOB SATISFACTION
BY EMPLOYMENT SECTOR
(Residing in Canada)

<u>Employment Sector</u>	<u>Total Number of Employed Graduates</u>	<u>Number of Satisfied or Very Satisfied Graduates</u>	<u>Per Cent of Satisfied or Very Satisfied Graduates</u>
University Research	39	27	69.2
University Teaching	207	171	82.6
Total University Sector	246	198	80.5
Other Educational Level	24	19	79.2
Health Care	39	28	71.8
Government	77	61	79.2
Industry	49	30	61.2
Self-Employed and Other	22	20	90.9
Total Non-University Sector	211	158	74.9
TOTAL	457	356	77.9

TABLE 4.2

OVERALL JOB SATISFACTION
BY FIELD OF STUDY

(Residing in Canada)

<u>Field of Study</u>	<u>Total Number of Employed Graduates</u>	<u>Number of Satisfied or Very Satisfied Graduates</u>	<u>Per Cent of Satisfied or Very Satisfied Graduates</u>
Education	44	38	86.4
Fine and Applied Arts	3	3	100.0
Humanities	75	51	68.0
Social Sciences	163	136	83.4
Agricultural and Biological Sciences	23	18	78.3
Engineering and Applied Sciences	42	30	71.4
Health	20	18	90.0
Mathematics and Physical Sciences	87	62	71.3
TOTAL	457	356	77.9

TABLE 4.3

OVERALL JOB SATISFACTION
BY PRIMARY WORK ACTIVITY

(Residing in Canada)

<u>Primary Work Activity</u>	<u>Total Number of Employed Graduates</u>	<u>Number of Satisfied or Very Satisfied Graduates</u>	<u>Per Cent of Satisfied or Very Satisfied Graduates</u>
Research and Development	135	103	76.3
Administration	40	33	82.5
Teaching	197	161	81.7
Other	85	59	69.4
TOTAL	457	356	77.9

TABLE 4.4

OVERALL JOB SATISFACTION
BY EMPLOYMENT SECTOR AND PRIMARY WORK ACTIVITY
(Residing in Canada)

Employment Sector	PRIMARY WORK ACTIVITY											
	Research and Development			Administration			Teaching			Other		
	E*	S*	%S*	E	S	%S	E	S	%S	E	S	%S
Univ. Research	35	24	68.6	1	1	100.0	-			3	2	66.7
Univ. Teaching	27	27	92.6	1	1	100.0	178	144	80.9	1	1	100.0
Total Univ. Sector	62	49	79.0	2	2	100.0	178	144	80.9	4	3	75.0
Other Ed. Level	-			3	2	66.7	13	11	84.6	8	6	75.0
Health Care	8	6	75.0	6	5	83.3	1	1	100.0	24	16	66.7
Government	40	34	85.0	12	10	83.3	2	2	100.0	23	15	65.2
Industry	23	12	52.2	9	7	77.8	1	1	100.0	16	10	62.5
Self-employed & Other	2	2	100.0	8	7	87.5	2	2	100.0	10	9	90.0
Total Non-Univ. Sector	73	54	74.0	38	31	81.6	19	17	89.5	81	56	69.1
Total	135	103	76.3	40	33	82.5	197	161	81.7	85	59	69.4
										457	356	77.9

* E = Number Employed
S = Number Satisfied
%S = Per Cent Satisfied

TABLE 4.5

OVERALL JOB SATISFACTION BY EMPLOYMENT SECTOR AND FIELD OF PH.D.
(percentage responding "very satisfied" and "satisfied")
(Residing in Canada)

	University Research	University Teaching	Total University	Other Educational Level	Health Care	Government	Industry	Self- Emp. & Other	Total Outside University	Total
Education	80.0	100.0	95.8	60.0	60.0	75.0	N.A.	100.0	75.0	86.4
Fine and Applied Arts	N.A.	100.0	100.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	100.0
Humanities	100.0	72.3	73.5	57.1	N.A.	50.0	25.0	77.8	57.7	68.0
Social Sciences	50.0	85.9	83.7	100.0	77.8	86.4	66.7	100.0	83.1	83.4
Agricultural and Biological Sciences	60.0	100.0	77.8	100.0	0.0	81.8	100.0	N.A.	78.6	78.3
Engineering and Applied Sciences	66.7	75.0	72.7	100.0	50.0	75.0	68.4	100.0	71.0	71.4
Health	100.0	88.9	91.7	N.A.	66.7	100.0	100.0	N.A.	87.5	90.0
Mathematics and Physical Sciences	66.7	72.0	70.0	100.0	100.0	77.3	55.6	100.0	72.3	71.3
Total	69.2	82.6	80.4	79.2	71.3	73.2	61.2	90.9	74.9	77.9

Tables 4.1 to 4.5 indicate the levels of overall job satisfaction by employment sector, field of study, and primary work activity.

The following sections examine some of the problem areas with respect to job satisfaction. The problem areas discussed are:

- (i) the university research sector
- (ii) the industrial sector
- (iii) humanities and physical science graduates in the university teaching sector.

Job Satisfaction in the University Research Employment Sector

Slightly less than 70 per cent of the respondents working in the university research employment sector expressed overall satisfaction with their jobs. This relatively low level of job satisfaction would seem to be caused mainly by dissatisfaction with salary levels and job security; the vast majority of respondents were quite pleased with the nature of their work.

Table 4.6, following, highlights some aspects of job satisfaction in the university research sector. As this Table illustrates, the respondents found their jobs suitable for someone with a Ph.D. and were satisfied with the opportunities for research. Only 3 per cent of the respondents did not find their jobs suitable for someone with their level of education, and just 10 per cent were dissatisfied with the opportunities for research. However, 77 per cent were concerned with job

security, and 64 per cent expressed dissatisfaction with their earnings.

Compared to other employment sectors, the university research sector does have lower salary levels. For example, almost 80 per cent of full-time employees in the university research section were earning less than \$20,000 per year, while only 31 per cent of the respondents in other employment sectors were earning less than \$20,000. Since respondents in the university research sector have no doubt compared their earnings to those of their peers, it is no surprise that they express a large measure of dissatisfaction with their earnings.

Despite the relatively low level of overall job satisfaction in the university research sector, this should not necessarily be considered an acute problem. In absolute terms, the level of satisfaction would seem to be reasonably high; seven of every ten graduates working in this sector were generally satisfied. And, although relatively poorly paid, the graduates in this sector do not seem to feel underemployed or dissatisfied with the research opportunities being made available to them. What should be of concern is what happens to these respondents following completion of their post-doctoral research at the universities. At this stage in their careers, these graduates do not yet seem to be disillusioned with either university work or research. More than 60 per cent still aspire

TABLE 4.6

ASPECTS OF JOB SATISFACTION IN
THE UNIVERSITY RESEARCH SECTOR

(i)

SUITABILITY OF EMPLOYMENT GIVEN RESPONDENTS EDUCATION	
Definitely Suitable:	53.8 %
Suitable in Some Respects:	41.0 %
Definitely Not Suitable:	2.6 %
No Response:	2.6 %

(ii)

DEGREE OF SATISFACTION	ASPECT OF JOB			
	OVERALL FEELING	OPPORTUNITIES FOR RESEARCH	SALARY	JOB SECURITY
Very Satisfied	23.1 %	48.7 %	7.7 %	5.1 %
Satisfied	46.2 %	35.9 %	25.6 %	15.4 %
Somewhat Dissatisfied	28.2 %	7.7 %	38.5 %	20.5 %
Very Dissatisfied	0.0 %	2.6 %	25.6 %	56.4 %
No Response	2.6 %	5.1 %	2.6 %	2.6 %

(iii)

INCOME DISTRIBUTION OF FULL-TIME EMPLOYEES IN UNIVERSITY RESEARCH SECTOR	
INCOME RANGE	PER CENT OF FULL-TIME EMPLOYEES
Less than \$10,000	2.9 %
\$10,000 - \$14,999	50.0 %
\$15,000 - \$19,999	26.5 %
\$20,000 - \$24,999	14.7 %
\$25,000 - \$29,999	2.9 %
\$30,000 - \$34,999	2.9 %
\$35,000 or more	0.0 %

to a university appointment, and another 15 per cent would like a research appointment outside the university sector. As long as future employment opportunities for these graduates are "suitable", neither society, nor the graduates themselves, would be likely to consider in retrospect the period of post-doctoral research at universities as unsatisfactory.

Job Satisfaction in Industry

Of any employment sector, the industrial sector has yielded the lowest level of job satisfaction to the Ph.D. graduates. Four of every ten graduates working in this sector expressed overall dissatisfaction with their jobs. And particularly noticeable is the level of overall dissatisfaction of those graduates working primarily in research or development activities; five of every ten graduates involved in these activities indicated general dissatisfaction with their jobs.

For each employment condition listed in the questionnaire, a substantial proportion of respondents expressed dissatisfaction. Most concern was expressed about the opportunities to use specialized knowledge gained in doctoral study, the opportunities for research, and the opportunities for keeping up with developments relating to their doctoral studies. For each of these aspects of employment, between 50 and 60 per cent of the respondents were dissatisfied. Least dissatisfaction was expressed about the educational level of colleagues, job security, the challenge of the work, and job status. About 33 per cent of the respondents were dissatisfied with these aspects of employment.

Respondents who overall were dissatisfied with their employment tended to be dissatisfied with almost all aspects of their jobs. Very dissatisfied respondents indicated, on average, dissatisfaction with eight of the ten aspects of employment listed in the questionnaire; somewhat dissatisfied graduates expressed, on average, dissatisfaction with seven of the ten job characteristics. In contrast, the comparable figures for respondents who were satisfied or very satisfied overall were 3.5 and 1.5 respectively.

Although respondents expressing overall dissatisfaction with their jobs tended to be dissatisfied with almost every aspect of their jobs it would appear that some employment conditions were more likely to lead to overall dissatisfaction than others. Research opportunities, for example, may be a more important determinant of overall satisfaction than earnings. Of the respondents who were not satisfied with either their earnings or research opportunities, 82 per cent claimed overall dissatisfaction with their jobs. Almost 60 per cent of the respondents who were satisfied with their salaries but disappointed with their research opportunities expressed overall dissatisfaction. However, only 12.5 per cent of those respondents who were satisfied with their research opportunities, but dissatisfied with their earnings, were dissatisfied overall.

With respect to research opportunities it appears that problems

TABLE 4.7

JOB SATISFACTION IN INDUSTRY
(Residing in Canada)

Aspect of Job	Degree of Satisfaction (%)				
	Very Satisfied	Satisfied	Somewhat Dissatisfied	Very Dissatisfied	No Response
Overall Feeling	28.6	32.7	28.6	8.2	2.0
Salary/Earnings	10.2	49.0	30.6	8.2	2.0
Status	14.3	49.0	28.6	6.1	2.0
Influence on Decisions	18.4	32.7	24.5	20.4	4.1
Educational Level of Colleagues	12.2	53.1	22.4	10.2	2.0
Promotion Prospects	14.3	34.7	32.7	14.3	4.1
Opportunity to use specialized knowledge	16.3	26.5	26.5	28.6	2.0
Opportunities for research	12.2	30.6	18.4	32.7	6.1
Opportunities for keeping up with developments	4.1	28.6	24.5	34.7	8.2
Job Security	10.2	53.1	12.2	20.4	4.1
Challenge of job	32.7	28.6	22.4	12.2	4.1

for graduates working in industry exist in terms of both the quantity and quality of these opportunities. Among those respondents who, in neither their primary nor secondary work activity were involved in research or development, almost 75 per cent expressed dissatisfaction with research opportunities. For these respondents it would seem that it was the absolute lack of opportunities which caused their dissatisfaction. However, even among those respondents whose primary or secondary work activity was related to research or development, considerable dissatisfaction about research opportunities was evident. Forty-five per cent of these graduates indicated dissatisfaction with their research opportunities. For these graduates, it would seem more likely that it was the quality or nature of the research opportunities which was causing their dissatisfaction, rather than the sheer lack of opportunities.

Table 4.7 summarizes the responses of graduates employed in industry to questions concerning the extent of their satisfaction in various aspects of their jobs.

Job Satisfaction of Humanities and Physical Science Graduates
In University Teaching

Graduates in the humanities and physical sciences indicated less overall satisfaction with university teaching jobs than did graduates of other fields of study. The major problems confronting humanities and physical science graduates would seem to be job security and career prospects. These graduates were twice as

likely as other graduates to be very dissatisfied with their job security; 37.5 per cent of the humanities and physical science graduates were very dissatisfied with their job security, while 19.3 per cent of graduates of other fields of study were very dissatisfied. In terms of career prospects, about one-third of the humanities and physical science graduates were very dissatisfied, while less than 10 per cent of other graduates employed in the university teaching sector expressed similar dissatisfaction.

This dissatisfaction of humanities and physical science graduates may be explained largely by the types of appointments and contracts many of these graduates received at universities. Almost 30 per cent of the humanities graduates, and more than 40 per cent of the physical science graduates had terminating contracts; for graduates of other fields of study the comparable figure in the university teaching sector was 18.5 per cent. And 25.5 per cent of humanities graduates held part-time positions, as compared to only 6.3 per cent of graduates from other fields. Table 4.8 shows by field of study the percentage of graduates employed in the university teaching sector with part-time and/or contractually limited positions.

The dissatisfaction of the humanities and physical science graduates was not confined only to job security and career prospects. In almost every aspect of university teaching jobs these

TABLE 4.8

PART-TIME AND CONTRACTUALLY LIMITED EMPLOYMENT IN
UNIVERSITY TEACHING SECTOR BY FIELD OF DOCTORAL STUDY

(Residing in Canada)

<u>Field of Study</u>	<u>Per Cent Employed Part-Time</u>	<u>Per Cent Contractually Limited</u>
Education (N=19)	0.0	21.1
Fine and Applied Arts (N=3)	0.0	0.0
Humanities (N=47)	25.5	29.8
Social Sciences (N=92)	7.6	17.4
Life Sciences (N=4)	0.0	25.0
Engineering (N=8)	0.0	0.0
Health Sciences (N=9)	11.1	44.4
Physical Sciences (N=25)	8.0	40.0
Total (N=207)	10.6	23.7

graduates displayed more dissatisfaction than other graduates. Examination of comments in the questionnaires suggests that many of the graduates with temporary or part-time appointments think of themselves as "second-class" members of the university community; to some degree they may view themselves as being on the periphery of academic life. Part-time employment seems to limit their research opportunities; although it is difficult to determine from the questionnaires, one would suspect that many part-time university teachers hold second jobs which reduce the time available for research. And their teaching load is often heavily laden with introductory courses which, in many cases, may not provide them with sufficient challenges.

Employment prospects outside the university sector for humanities and physical science graduates probably tend to intensify the overall dissatisfaction of those graduates with little job security at universities. Given the dissatisfaction of physical science graduates in industry, particularly of those involved in research and development activities, and the freeze by many governments on hiring, it seems unlikely that physical science graduates with temporary or part-time university appointments would view the non-university sector as very attractive. To humanities graduates in similar positions, the non-university sector may seem even less attractive. Both the demand for their services outside the university sector and the level of satisfaction of those humanities graduates employed in the non-university sectors

are lower than those experienced by other graduates.

Appendix B contains tables which show by field of study the degree of satisfaction that respondents in the university teaching sector have with various aspects of their jobs.

SUMMARY OF ASPECTS OF JOB SATISFACTION

Table 4.9 indicates by employment sector, the number and percentage of respondents who are very satisfied or satisfied with various conditions of their employment. To a large extent the data in this table seems to reflect the obvious, namely:

- (i) employment sectors differ in the opportunities they offer Ph.D. graduates;
- (ii) very few jobs, no matter which employment sector one examines, are satisfactory in all respects; and
- (iii) individuals differ in their employment expectations.

The data suggest that graduates primarily concerned with research opportunities or challenging work would be best advised to seek employment in the university research sector; however job security and earnings would be relatively low in this sector. Graduates most concerned with earnings and job security would be more likely to be satisfied, initially, at least, in the government sector; however, the perceptions that graduates in the government have about their future career prospects would indicate that, despite their current satisfaction with earnings and

TABLE 4.9

ASPECTS OF JOB SATISFACTION BY EMPLOYMENT SECTOR
Number and Percentage of Graduates who
Are "Very Satisfied" or "Satisfied"
(Residing in Canada)

ASPECT	EMPLOYMENT SECTOR													
	University Research No. %	University Teaching No. %	Other Educational Level No. %	Health Care No. %	Government No. %	Industry No. %	Other No. %	Total No. %						
Overall Feelings Toward Job	27 69.2	171 82.6	19 79.2	28 71.8	61 79.2	30 61.2	20 90.9	356 77.9						
Salary/Earnings	13 33.3	118 57.0	16 66.7	24 61.5	56 72.7	29 59.2	12 54.5	268 58.6						
Status/Rank or Position	21 53.8	158 76.3	15 62.5	28 71.8	54 70.1	31 63.3	14 63.6	321 70.2						
Influence on Decisions	22 56.4	135 65.2	14 58.3	25 64.1	45 58.4	25 51.0	18 81.8	284 62.1						
Educational Level of Colleagues	32 82.1	176 85.0	19 79.2	28 71.8	63 81.8	32 65.3	16 72.7	366 80.1						
Promotion/Career Aspects	12 30.8	128 61.8	13 54.2	19 48.7	30 39.0	24 49.0	8 36.4	234 51.2						
Opportunity to Use Special Knowledge	32 82.1	162 78.3	10 41.7	29 74.4	53 68.8	21 42.9	16 72.7	323 70.7						
Opportunities for Research	33 84.6	142 68.6	7 29.2	25 64.1	42 54.5	21 42.9	14 63.6	284 62.1						
Keeping up with Developments	24 61.5	157 75.8	8 33.3	25 64.1	39 50.6	16 32.7	12 54.5	281 61.5						
Job Security	8 20.5	112 54.1	16 66.7	28 71.8	52 67.5	31 63.3	14 63.6	261 57.1						
Challenge of Job	34 87.2	169 81.6	15 62.5	29 74.4	59 76.6	30 61.2	19 86.4	355 77.7						

job security, they do not believe that the government sector provides much scope for advancement. Graduates desiring opportunities to apply their specialized knowledge, and to keep abreast of developments in their field of study would seem to have the best chance to do so in the university teaching sector; however, concern about job security would be relatively high in this sector.

Differences among individuals in employment expectations are evident in comparing the job satisfaction data of graduates employed in industry to that of graduates employed in the non-university educational sector. Recall from the earlier discussions of job satisfaction in industry that research opportunities appeared to adversely affect the overall feeling graduates employed in this sector had about their jobs. But, in the non-university educational sector, in which less than 30 per cent of the graduates were satisfied with research opportunities, almost 80 per cent of the graduates expressed overall satisfaction with their jobs.

The data in Table 4.9 give the impression that the Ph.D. graduates are for the most part reasonably satisfied with their current employment, but rather pessimistic about their future career prospects. On the one hand, when taking all aspects of their jobs into consideration, slightly more than 75 per cent of the respondents indicated that they were either satisfied or

very satisfied; in addition, more than 75 per cent of the respondents also indicated that they were satisfied with the challenges that their jobs presented. On the other hand, however, only slightly more than 50 per cent of the respondents expressed satisfaction with their career and/or promotion prospects and only 57 per cent were satisfied with their current job security.

Such results point to the limitations of any employment survey of recent graduates. Both society and the degree recipients themselves treat, to some extent, education as an investment. As with most investments, the time period over which benefits are derived is quite lengthy. In the case of Ph. D. graduates, benefits may be derived for 30 - 35 years, depending on the length of their careers; so at this early date conclusions by either policy makers or the graduates in this survey about job satisfaction are premature. Expression of job satisfaction, or lack of it, may be unduly affected by general pessimism about what the future holds.

With the above qualification in mind, one area that should be further examined in future studies is the relationship between graduate training and employment in industry. The job satisfaction data indicate that recent Ph.D. graduates employed in industry are less satisfied than graduates in

other employment sectors with almost all aspects of their jobs. The results of this survey suggest that research opportunities may be the factor contributing most to the overall dissatisfaction with employment in industry; however, the survey results provide little insight into why, in many cases, research opportunities are unsatisfactory. Understanding the nature of the relationship between graduate training and employment in industry may become increasingly important given employment trends in government and universities.

Appendix C contains detailed tables which indicate the overall job satisfaction of the respondents; in these tables respondents are classified according to their field of study, employment sector, and primary work activity.

SECTION 5

RECOMMENDATIONS

The findings of this survey suggest three major areas which warrant further examination. These are: (1) the feasibility of providing prospective Ph.D. candidates with national projections of demand for university faculty; (2) the link between doctoral programs and manpower requirements of industry; and (3) the effects of declining enrollments in the humanities.

(1) Faculty Projections

Many studies, for example, those of Richard Freeman,¹ indicate that students do respond to market conditions when selecting their educational programs. Inadequate information about employment conditions limits, however, the ability of students to make appropriate educational and career decisions. To reduce the likelihood of an increasing imbalance between the number of Ph.D. candidates desiring a university appointment and the number of openings at universities, the possibility of providing potential Ph.D. candidates with national forecasts of demand for university faculty should be explored. In exploring this possibility, consideration should be given to: (a) which groups would undertake to produce these forecasts and the manner of funding these bodies; (b) the expected and tolerable range of error in 5 to 10 year forecasts of national demand for university faculty; and (c) the means of disseminating such forecasts to prospective Ph.D. candidates.

¹ See: R.A. Freeman, The Market for College-Trained Manpower, Harvard University Press, 1971

(2) Strengthening the link between Doctoral Programs and Manpower Requirements of Industry

Employers in industry increasingly may find Ph.D. graduates approaching them for jobs in light of constraints on hiring by governments and universities. Will demand by industry for Ph.D. graduates increase sufficiently to compensate for the reduction in employment opportunities in other sectors? And, if demand does increase, will the Ph.D. graduates obtain jobs which utilize their skills and provide them with reasonable levels of job satisfaction? Positive answers to both of these questions are required if current enrolments in many Ph.D. programs are to be sustained and Canada's industrial research capabilities are to be enhanced. According to the results of this survey, industry presently hires relatively few Ph.D. graduates, and those graduates hired by industry tend to experience relatively low levels of job satisfaction. At this stage, then, it would not appear that favourable responses to these questions are very probable.

In an attempt to improve the relationships between universities and industry, a detailed analysis of both the doctoral and work experiences of graduates employed in industry should be undertaken. In conducting this analysis, industrial employers, academics, and Ph.D. graduates should be involved. The analysis should address questions such as:

(a) What types of skills does industry require?

(b) Where and how are these skills best developed?

Could, for example, industrial employers become more involved in the development of engineering and science thesis topics? Or, could some students benefit by serving their graduate assistantships in industry?

- (c) Would it be beneficial for some Ph.D. programs to adopt a co-operative format similar to that at the University of Waterloo?

(3) Preserving the Humanities

If traditional employment opportunities for Ph.D. graduates decline further, those affected most adversely will likely be graduates in the humanities. The survey results reveal that these graduates experienced more difficulties in finding jobs, and less job satisfaction, than did graduates in other fields of study. Given these results, one must be concerned about the effects of possible future reductions in enrolments in humanities programs at all levels (i.e., undergraduate and graduate levels). Although, from an individual's point of view, the decision not to enrol in a humanities program may be correct, the costs to society of large numbers of potential students making this decision may be very high.

At the very least, attempts should be made to ensure that a minimum core of high quality humanities programs remains in place in Ontario. Consideration should be given to:

- (a) eliminating some humanities programs and strengthening

others to counteract the dilution in quality that might occur as a result of reduced enrolments; (b) the creation of more scholarships, both at the undergraduate and graduate levels, for students enrolling in humanities programs; (c) the development of protracted post-doctoral fellowships in the humanities (e.g., fellowships which guarantee employment for up to 5 years); and (d) government assistance for employers outside the university sector who create openings that are suitable for humanities graduates. These suggestions need not imply increases in total expenditures by governments. Rather, they should entail increases in public expenditures per person specializing in the humanities.

APPENDIX A

BACKGROUND CHARACTERISTICS OF RESPONDENTS

TABLE A-1

RESPONSE RATE BY UNIVERSITY

<u>UNIVERSITY</u>	<u>POPULATION SIZE</u>	<u>RESPONSE SIZE</u>	<u>RESPONSE RATE</u>
Carleton	27	22	81.5
Guelph	34	21	61.8
McMaster	95	56	58.9
Ottawa	67	55	82.1
Queens	59	42	71.2
Toronto	347	220	63.4
Waterloo	90	61	67.8
Western	78	60	76.9
Windsor	24	11	45.8
York	56	39	69.6
Total	877	587	66.9

TABLE A-2

AREA OF SPECIALIZATION
OF PH.D. GRADUATES

Area of Specialization of Doctoral Study	Male %	Female %	Total %
Educational Psychology	1.7	7.2	2.7
Educational Administration	1.3	2.7	1.5
Other Education	3.6	3.6	3.6
TOTAL IN EDUCATION	6.5	13.5	7.8
TOTAL IN FINE AND APPLIED ARTS	0.6	0.9	0.7
History	4.2	3.6	4.1
English	4.2	12.6	5.8
Philosophy	2.1	3.6	2.4
Other Humanities	4.4	11.7	5.8
TOTAL IN HUMANITIES	14.9	31.5	18.1
Anthropology	1.3	0.9	1.2
Business Administration	1.7	0.0	1.4
Economics	3.4	0.0	2.7
Geography	2.5	0.9	2.2
Political Science	3.4	2.7	3.2
Psychology	12.0	17.1	12.9
Sociology	3.6	1.8	3.2
Other Social Sciences	3.2	6.3	3.7
TOTAL IN SOCIAL SCIENCES	30.9	29.7	30.7
Agriculture	0.8	0.9	0.9
Biochemistry	0.8	2.7	1.2
Biology	1.9	2.7	2.0
Botany	1.7	1.8	1.5
Other Agriculture and Biological Sciences	0.6	0.9	0.7
TOTAL IN AGRICULTURE AND BIOLOGICAL SCIENCES	7.6	9.9	8.0
Chemical Engineering	3.2	1.8	2.9
Electrical Engineering	3.2	0.0	2.6
Mechanical Engineering	0.6	1.8	0.9
Other Engineering and Applied Sciences	4.6	0.9	3.9
TOTAL IN ENGINEERING AND APPLIED SCIENCES	11.6	4.5	10.2
TOTAL IN HEALTH	5.9	2.7	5.3
Computer Science	1.5	0.9	1.4
Mathematics	1.7	0.9	1.5
Chemistry	8.2	3.6	7.3
Geology	3.4	0.0	2.7
Physics	5.3	0.9	4.4
Other Mathematics and Physical Sciences	2.1	0.9	1.9
TOTAL IN MATHEMATICS AND PHYSICAL SCIENCES	22.1	7.2	19.3
N	476	111	587

TABLE A-3

AGE DISTRIBUTION OF PH.D. GRADUATES

<u>AGE</u>	<u>MALE</u> <u>%</u>	<u>FEMALE</u> <u>%</u>	<u>TOTAL</u> <u>%</u>
26 - 30	19.5	14.4	18.6
31 - 35	51.9	45.9	50.8
36 - 40	18.1	23.4	19.1
41 - 45	4.6	7.2	5.1
46 - 50	2.9	6.3	3.6
51 - 60	1.9	1.8	1.9
Not Reported	<u>1.1</u>	<u>0.9</u>	<u>1.0</u>
	100.0	99.9	100.1
N	476	111	587

TABLE A-4

CURRENT RESIDENCE OF PH.D. GRADUATES

<u>PLACE OF CURRENT RESIDENCE</u>	<u>MALE</u>	<u>FEMALE</u>	<u>TOTAL</u>
Newfoundland	2.1	0.0	1.7
Prince Edward Island	0.2	0.0	0.2
Nova Scotia	4.0	4.5	4.1
New Brunswick	1.3	0.9	1.2
Quebec	7.8	1.8	6.6
Ontario	53.4	70.3	56.6
Manitoba	2.7	1.8	2.6
Saskatchewan	1.9	0.0	1.5
Alberta	5.3	2.7	4.8
British Columbia	2.7	3.6	2.9
Yukon	0.2	0.0	0.2
TOTAL FOR CANADA	81.5	85.6	82.3
UNITED STATES	8.4	11.7	9.0
REST OF WORLD	10.1	2.7	8.7
	100.0	100.0	100.0
N	476	111	587

TABLE A-5

CURRENT RESIDENCE AND VISA STATUS
OF PH.D. GRADUATES

<u>Current Residence</u>	<u>Visa Status</u>			<u>Total</u>
	<u>Canadian Citizen</u> #	<u>Non-Canadian Citizen Not Residing In Canada</u> #	<u>Landed Immigrant</u> #	
Canada	419	N.A.	64	483
United States	17	36	N.A.	53
United Kingdom	1	5	N.A.	6
Other European Countries	4	1	N.A.	5
Australia and New Zealand	4	8	N.A.	12
Caribbean, Central and South America	1	5	N.A.	6
Asia	1	13	N.A.	14
Africa	0	8	N.A.	8
Total	447	76	64	587

APPENDIX B

JOB SATISFACTION IN UNIVERSITY TEACHING

TABLE B-1

DEGREE OF SATISFACTION OF UNIVERSITY TEACHERS
WITH EARNINGS BY DOCTORAL FIELD OF STUDY

(Residing in Canada)

<u>Field of Study</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Very Dissatisfied</u>	<u>No Response</u>
Education (N=19)	10.5%	57.9%	26.3%	5.3%	0.0%
Fine and Applied Arts (N=3)	33.3%	33.3%	33.3%	0.0%	0.0%
Humanities (N=47)	19.1%	40.4%	19.1%	21.3%	0.0%
Social Sciences (N=92)	19.6%	35.9%	34.8%	8.7%	1.1%
Life Sciences (N=4)	0.0%	25.0%	75.0%	0.0%	0.0%
Engineering (N=8)	12.5%	37.5%	37.5%	12.5%	0.0%
Health Sciences (N=9)	33.3%	33.3%	11.1%	22.2%	0.0%
Physical Sciences (N=25)	16.0%	36.0%	36.0%	12.0%	0.0%
Total (N=207)	18.4%	38.6%	30.4%	12.1%	0.5%

TABLE B-2

DEGREE OF SATISFACTION OF UNIVERSITY TEACHERS WITH
STATUS OF POSITION BY DOCTORAL FIELD OF STUDY

(Residing in Canada)

<u>Field of Study</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Very Dissatisfied</u>	<u>No Response</u>
Education (N=19)	52.6%	47.4%	0.0%	0.0%	0.0%
Fine and Applied Arts (N=3)	66.7%	33.3%	0.0%	0.0%	0.0%
Humanities (N=47)	23.4%	38.3%	25.5%	12.8%	0.0%
Social Sciences (N=92)	26.1%	54.3%	9.8%	6.5%	3.3%
Life Sciences (N=4)	25.0%	75.0%	0.0%	0.0%	0.0%
Engineering (N=8)	25.0%	50.0%	25.0%	0.0%	0.0%
Health Sciences (N=9)	55.6%	22.2%	11.1%	11.1%	0.0%
Physical Sciences (N=25)	28.0%	36.0%	28.0%	4.0%	4.0%
Total (N=207)	30.0%	46.4%	15.0%	6.8%	1.9%

TABLE B-3

DEGREE OF SATISFACTION OF UNIVERSITY TEACHERS WITH THEIR
INFLUENCE ON DECISIONS BY DOCTORAL FIELD OF STUDY

(Residing in Canada)

<u>Field of Study</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Very Dissatisfied</u>	<u>No Response</u>
Education (N=19)	21.1%	63.2%	10.5%	5.3%	0.0%
Fine and Applied Arts (N=3)	0.0%	100.0%	0.0%	0.0%	0.0%
Humanities (N=47)	14.9%	40.4%	10.6%	27.7%	6.4%
Social Sciences (N=92)	17.4%	48.9%	20.7%	9.8%	3.3%
Life Sciences (N=4)	0.0%	100.0%	0.0%	0.0%	0.0%
Engineering (N=8)	50.0%	37.5%	0.0%	12.5%	0.0%
Health Sciences (N=9)	22.2%	33.3%	22.2%	11.1%	11.1%
Physical Sciences (N=25)	12.0%	40.0%	28.0%	20.0%	0.0%
Total (N=207)	17.4%	47.8%	16.9%	14.5%	3.4%

TABLE B-4

DEGREE OF SATISFACTION OF UNIVERSITY TEACHERS
WITH EDUCATIONAL LEVEL OF COLLEAGUES

(Residing in Canada)

<u>Field of Study</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Very Dissatisfied</u>	<u>No Response</u>
Education (N=19)	26.3%	68.4%	5.3%	0.0%	0.0%
Fine and Applied Arts (N=3)	0.0%	33.3%	66.7%	0.0%	0.0%
Humanities (N=47)	38.3%	42.5%	14.9%	4.3%	0.0%
Social Sciences (N=92)	34.8%	52.2%	8.7%	2.2%	2.2%
Life Sciences (N=4)	50.0%	50.0%	0.0%	0.0%	0.0%
Engineering (N=8)	25.0%	37.5%	25.0%	12.5%	0.0%
Health Sciences (N=9)	44.4%	44.4%	0.0%	0.0%	11.1%
Physical Sciences (N=25)	44.0%	40.0%	16.0%	0.0%	0.0%
Total (N=207)	35.7%	48.9%	11.6%	2.4%	1.4%

TABLE B-5

DEGREE OF SATISFACTION OF UNIVERSITY TEACHERS WITH
PROMOTION/CAREER PROSPECTS BY DOCTORAL FIELD OF STUDY

(Residing in Canada)

<u>Field of Study</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Very Dissatisfied</u>	<u>No Response</u>
Education (N=19)	21.1%	63.2%	15.8%	0.0%	0.0%
Fine and Applied Arts (N=3)	33.3%	33.3%	33.3%	0.0%	0.0%
Humanities (N=47)	12.8%	31.9%	14.9%	36.2%	4.3%
Social Sciences (N=92)	15.2%	53.3%	17.4%	13.0%	1.1%
Life Sciences (N=4)	0.0%	25.0%	50.0%	25.0%	0.0%
Engineering (N=8)	12.5%	50.0%	37.5%	0.0%	0.0%
Health Sciences (N=9)	22.2%	66.7%	0.0%	0.0%	11.1%
Physical Sciences (N=25)	12.0%	36.0%	24.0%	28.0%	0.0%
Total (N=207)	15.0%	46.9%	18.4%	17.9%	1.9%

TABLE B-6

DEGREE OF SATISFACTION OF UNIVERSITY TEACHERS WITH OPPORTUNITIES
TO USE SPECIALIZED KNOWLEDGE GAINED IN DOCTORAL STUDY

(Residing in Canada)

<u>Field of Study</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Very Dissatisfied</u>	<u>No Response</u>
Education (N=19)	57.9%	31.6%	5.3%	5.3%	0.0%
Fine and Applied Arts (N=3)	66.7%	0.0%	33.3%	0.0%	0.0%
Humanities (N=47)	34.0%	25.6%	21.3%	19.1%	0.0%
Social Sciences (N=92)	45.7%	41.3%	4.3%	6.5%	2.2%
Life Sciences (N=4)	25.0%	75.0%	0.0%	0.0%	0.0%
Engineering (N=8)	62.5%	25.0%	12.5%	0.0%	0.0%
Health Sciences (N=9)	55.6%	33.3%	0.0%	11.1%	0.0%
Physical Sciences (N=25)	32.0%	32.0%	24.0%	12.0%	0.0%
Total (N=207)	43.5%	34.7%	11.1%	9.7%	1.0%

TABLE B-7

DEGREE OF SATISFACTION OF UNIVERSITY TEACHERS WITH
RESEARCH OPPORTUNITIES BY DOCTORAL FIELD OF STUDY

(Residing in Canada)

<u>Field of Study</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Very Dissatisfied</u>	<u>No Response</u>
Education (N=19)	36.8%	42.1%	15.8%	5.3%	0.0%
Fine and Applied Arts (N=3)	0.0%	66.7%	0.0%	33.3%	0.0%
Humanities (N=47)	21.3%	42.6%	21.3%	14.9%	0.0%
Social Sciences (N=92)	35.9%	34.8%	17.4%	8.7%	3.3%
Life Sciences (N=4)	0.0%	50.0%	50.0%	0.0%	0.0%
Engineering (N=8)	50.0%	12.5%	37.5%	0.0%	0.0%
Health Sciences (N=9)	33.3%	55.6%	0.0%	11.1%	0.0%
Physical Sciences (N=25)	24.0%	36.0%	32.0%	8.0%	0.0%
Total (N=207)	30.4%	38.2%	20.3%	9.7%	1.4%

TABLE B-8

DEGREE OF SATISFACTION OF UNIVERSITY TEACHERS WITH OPPORTUNITIES
FOR KEEPING UP WITH DEVELOPMENTS IN DOCTORAL FIELD OF STUDY

(Residing in Canada)

<u>Field of Study</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Very Dissatisfied</u>	<u>No Response</u>
Education (N=19)	31.6%	57.9%	10.5%	0.0%	0.0%
Fine and Applied Arts (N=3)	0.0%	66.7%	33.3%	0.0%	0.0%
Humanities (N=47)	31.9%	29.8%	29.8%	8.5%	0.0%
Social Sciences (N=92)	34.8%	45.7%	13.0%	5.4%	1.1%
Life Sciences (N=4)	25.0%	25.0%	50.0%	0.0%	0.0%
Engineering (N=8)	37.5%	62.5%	0.0%	0.0%	0.0%
Health Sciences (N=9)	44.4%	44.4%	11.1%	0.0%	0.0%
Physical Sciences (N=25)	32.0%	36.0%	24.0%	8.0%	0.0%
Total (N=207)	33.3%	42.5%	18.4%	5.3%	0.5%

TABLE B-9

DEGREE OF SATISFACTION OF UNIVERSITY TEACHERS
WITH JOB SECURITY BY DOCTORAL FIELD OF STUDY

(Residing in Canada)

<u>Field of Study</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Very Dissatisfied</u>	<u>No Response</u>
Education (N=19)	15.8%	47.4%	26.3%	10.5%	0.0%
Fine and Applied Arts (N=3)	33.3%	66.7%	0.0%	0.0%	0.0%
Humanities (N=47)	12.8%	23.4%	23.4%	38.3%	2.1%
Social Sciences (N=92)	20.7%	39.1%	17.4%	20.7%	2.2%
Life Sciences (N=4)	25.0%	25.0%	0.0%	50.0%	0.0%
Engineering (N=8)	25.0%	50.0%	12.5%	12.5%	0.0%
Health Sciences (N=9)	11.1%	55.6%	11.1%	22.2%	0.0%
Physical Sciences (N=25)	16.0%	28.0%	20.0%	36.0%	0.0%
Total (N=207)	17.9%	36.2%	18.8%	25.6%	1.4%

TABLE B-10

DEGREE OF SATISFACTION OF UNIVERSITY TEACHERS
WITH CHALLENGE OF JOB BY DOCTORAL FIELD OF STUDY

<u>Field of Study</u>	<u>Very Satisfied</u>	<u>Satisfied</u>	<u>Somewhat Dissatisfied</u>	<u>Very Dissatisfied</u>	<u>No Response</u>
Education (N=19)	63.2%	31.6%	5.3%	0.0%	0.0%
Fine and Applied Arts (N=3)	33.3%	33.3%	33.3%	0.0%	0.0%
Humanities (N=47)	34.0%	40.5%	19.1%	6.4%	0.0%
Social Sciences (N=92)	42.4%	41.3%	9.8%	4.3%	2.2%
Life Sciences (N=4)	50.0%	50.0%	0.0%	0.0%	0.0%
Engineering (N=8)	37.5%	25.0%	25.0%	12.5%	0.0%
Health Sciences (N=9)	44.4%	44.4%	0.0%	11.1%	0.0%
Physical Sciences (N=25)	28.0%	52.0%	12.0%	8.0%	0.0%
Total (N=207)	44.9%	36.7%	12.1%	5.3%	1.0%

APPENDIX C

JOB SATISFACTION BY
FIELD OF STUDY,
EMPLOYMENT SECTOR
AND PRIMARY WORK ACTIVITY

TABLE C-1

OVERALL JOB SATISFACTION OF EDUCATION GRADUATES
BY EMPLOYMENT SECTOR AND PRIMARY WORK ACTIVITY
(Residing in Canada)

Employment Sector	PRIMARY WORK ACTIVITY											
	Research and Development			Administration			Teaching			Other		
	E*	S*	%S*	E	S	%S	E	S	%S	E	S	%S
Univ. Research	5	4	80.0	-	-	-	-	-	-	-	4	80.0
Univ. Teaching	3	3	100.0	-	-	-	16	16	100.0	-	19	100.0
Total Univ. Sector	8	7	87.5	-	-	-	16	16	100.0	-	23	95.8
Other Educ. Level	-	-	-	2	1	50.0	2	1	50.0	1	1	100.0
Health Care	1	1	100.0	2	1	50.0	-	-	-	2	1	50.0
Government	-	-	-	1	1	100.0	-	-	-	3	2	66.7
Industry	-	-	-	-	-	-	-	-	-	-	-	-
Self-Employed & Other	-	-	-	3	3	100.0	1	1	100.0	2	2	100.0
Total Non-Univ. Sector	1	1	100.0	8	6	75.0	3	2	66.7	8	6	75.0
Total	9	8	88.9	8	6	75.0	19	18	94.7	8	6	75.0
											38	86.4

* E = Number Employed
S = Number Satisfied or Very Satisfied
%S = Per Cent Satisfied or Very Satisfied

OVERALL JOB SATISFACTION OF HUMANITIES GRADUATES
BY EMPLOYMENT SECTOR AND PRIMARY ACTIVITY

(Residing in Canada)

TABLE C-2

Employment Sector	PRIMARY WORK ACTIVITY											
	Research and Development			Administration			Teaching			Other		
	E*	S*	%S*	E	S	%S	E	S	%S	E	S	%S
Univ. Research	1	1	100.0	-	-	-	-	-	-	1	1	100.0
Univ. Teaching	1	1	100.0	-	-	-	46	33	71.7	-	-	-
Total Univ. Sector	2	2	100.0	-	-	-	46	33	71.7	1	1	100.0
Other Educ. Level	-	-	-	1	1	100.0	4	3	75.0	2	0	0.0
Health Care	-	-	-	-	-	-	-	-	-	-	-	-
Government	-	-	-	2	1	50.0	-	-	-	4	2	50.0
Industry	1	0	0.0	1	0	0.0	-	-	-	2	1	50.0
Self-Employed & Other	-	-	-	4	3	75.0	-	-	-	5	4	80.0
Total Non-Univ. Sector	1	0	0.0	8	5	62.5	4	3	75.0	13	7	53.8
Total	3	2	66.7	8	5	62.5	50	36	72.0	14	8	57.1
										75	51	68.0

* E = Number Employed

S = Number Satisfied or Very Satisfied

%S = Per Cent Satisfied or Very Satisfied

TABLE C-3

OVERALL JOB SATISFACTION OF SOCIAL SCIENCE GRADUATES
BY EMPLOYMENT SECTOR AND PRIMARY WORK ACTIVITY

(Residing in Canada)

	PRIMARY WORK ACTIVITY											
	Research and Development			Administration			Teaching			Other		
	E*	S*	%S*	E	S	%S	E	S	%S	E	S	%S
Univ. Research	5	2	40.0	-	-	-	-	-	-	1	1	100.0
Univ. Teaching	16	15	93.8	1	1	100.0	75	63	84.0	-	-	-
Total Univ. Sector	21	17	81.0	1	1	100.0	75	63	84.0	1	1	100.0
Other Educ. Level	-	-	-	-	-	-	2	2	100.0	5	5	100.0
Health Care	3	2	66.7	4	4	100.0	1	1	100.0	19	14	73.7
Government	4	3	75.0	8	7	87.5	1	1	100.0	9	8	88.9
Industry	-	-	-	-	-	-	1	1	100.0	5	3	60.0
Self-Employed & Other	1	1	100.0	-	-	-	-	-	-	2	2	100.0
Total Non-Univ. Sector	8	6	75.0	12	11	91.7	5	5	100.0	40	32	80.0
Total	29	23	79.3	13	12	92.3	80	68	85.0	41	33	80.5
										163	136	83.4

* E = Number Employed

S = Number Satisfied or Very Satisfied

%S = Per Cent Satisfied or Very Satisfied

TABLE C-4

OVERALL JOB SATISFACTION OF AGRICULTURE AND BIOLOGICAL SCIENCE
GRADUATES BY EMPLOYMENT SECTOR AND PRIMARY WORK ACTIVITY
(Residing in Canada)

Employment Sector	PRIMARY WORK ACTIVITY											
	Research and Development			Administration			Teaching			Other		
	E*	S*	%S*	E	S	%S	E	S	%S	E	S	%S
Univ. Research	4	3	75.0	-			-			1	0	0.0
Univ. Teaching	-			-			4	4	100.0	-		
Total Univ. Sector	4	3	75.0	-			4	4	100.0	1	0	0.0
Other Educ. Level	-			-			1	1	100.0	-		
Health Care	1	0	0.0	-			-			-		
Government	10	8	80.0	-			1	1	100.0	-		
Industry	-			1	1	100.0	-			-		
Self-Employed & Other	-			-			-			-		
Total Non-Univ. Sector	11	8	72.7	1	1	100.0	2	2	100.0	-		
Total	15	11	73.3	1	1	100.0	6	6	100.0	1	0	0.0
										23	18	78.3

*E = Number Employed
S = Number Satisfied or Very Satisfied
%S = Per Cent Satisfied or Very Satisfied

TABLE C-5

OVERALL JOB SATISFACTION OF ENGINEERING GRADUATES
BY EMPLOYMENT SECTOR AND PRIMARY WORK ACTIVITY

(Residing in Canada)

Employment Sector	PRIMARY WORK ACTIVITY														
	Research and Development			Administration			Teaching			Other			Total		
	E*	S*	%S*	E	S	%S	E	S	%S	E	S	%S	E	S	%S
Univ. Research	2	1	50.0	1	1	100.0	-	-	-	-	-	-	3	2	66.7
Univ. Teaching	-	-	-	-	-	-	8	6	75.0	-	-	-	8	6	75.0
Total Univ. Sector	2	1	50.0	1	1	100.0	8	6	75.0	-	-	-	11	8	72.7
Other Educ. Level	-	-	-	-	-	-	1	1	100.0	-	-	-	1	1	100.0
Health Care	1	1	100.0	-	-	-	-	-	-	1	0	0.0	2	1	50.0
Government	6	5	83.3	-	-	-	-	-	-	2	1	50.0	8	6	75.0
Industry	11	7	63.6	3	2	66.7	-	-	-	5	4	80.0	19	13	68.4
Self-Employed & Other	-	-	-	1	1	100.0	-	-	-	-	-	-	1	1	100.0
Total Non-Univ. Sector	18	13	72.2	4	3	75.0	1	1	100.0	8	5	62.5	31	22	71.0
Total	20	14	70.0	5	4	80.0	9	7	77.8	8	5	62.5	42	30	71.4

* E = Number Employed

S = Number Satisfied or Very Satisfied

%S = Per Cent Satisfied or Very Satisfied

TABLE C-6

OVERALL JOB SATISFACTION OF HEALTH SCIENCE GRADUATES
BY EMPLOYMENT SECTOR AND PRIMARY WORK ACTIVITY

(Residing in Canada)

Employment Sector	PRIMARY WORK ACTIVITY											
	Research and Development			Administration			Teaching			Other		
	E*	S*	%S*	E	S	%S	E	S	%S	E	S	%S
Univ. Research	3	3	100.0	3			-			-	3	3 100.0
Univ. Teaching	4	4	100.0	-			4	3	75.0	1	1 100.0	9 8 88.9
Total Univ. Sector	7	7	100.0	-			4	3	75.0	1	1 100.0	12 11 91.7
Other Educ. Level	-			-			-			-		
Health Care	1	1	100.0	-			-			2	1 50.0	3 2 66.7
Government	4	4	100.0	-			-			-	4 4 100.0	
Industry	-			1	1	100.0	-			-	1 1 100.0	
Self-Employed & Other	-			-			-			-		
Total Non-Univ. Sector	5	5	100.0	1	1	100.0	-			2	1 50.0	8 7 87.5
Total	12	12	100.0	1	1	100.0	4	3	75.0	3	2 66.7	20 18 90.0

* E = Number Employed

S = Number Satisfied or Very Satisfied

%S = Per Cent Satisfied or Very Satisfied

TABLE C-7

OVERALL JOB SATISFACTION OF MATHEMATICS AND PHYSICAL SCIENCE
GRADUATES BY EMPLOYMENT SECTOR AND PRIMARY WORK ACTIVITY

(Residing in Canada)

Employment Sector	PRIMARY WORK ACTIVITY											
	Research and Development			Administration			Teaching			other		
	E*	S*	%S*	E	S	%S	E	S	%S	E	S	%S
Univ. Research	15	10	66.7	-	-	-	-	-	-	-	-	-
Univ. Teaching	3	2	66.7	-	-	-	22	16	72.7	-	-	-
Total Univ. Sector	18	12	66.7	-	-	-	22	16	72.7	-	-	-
Other Educ. Level	-	-	-	-	-	-	3	3	100.0	-	-	-
Health Care	1	1	100.0	-	-	-	-	-	-	-	-	-
Government	16	14	87.5	1	1	100.0	-	-	-	5	2	40.0
Industry	11	5	45.5	3	3	100.0	-	-	-	4	2	50.0
Self-Employed & Other	1	1	100.0	-	-	-	1	1	100.0	1	1	100.0
Total Non-Univ. Sector	29	21	72.4	4	4	100.0	4	4	100.0	10	5	50.0
Total	47	33	70.2	4	4	100.0	26	20	70.9	10	5	50.0
										87	62	71.3

* E = Number Employed

S = Number Satisfied or Very Satisfied

%S = Per Cent Satisfied or Very Satisfied

APPENDIX D

SUITABILITY OF EMPLOYMENT
TO EDUCATIONAL BACKGROUND

TABLE D-1

SUITABILITY OF CURRENT EMPLOYMENT: "To what extent do you feel that your current employment is suitable for someone with your level of education?"

Number and Percentage responding "Definitely Suitable" by discipline and employment sector (Residing in Canada)

EMPLOYMENT SECTOR

	University Research		University Teaching		Other Educational Level		Health Care		Government		Industry		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Educational Psychology	1	25.0	3	100.0	1	50.0	2	66.7	1	100.0	N.A.	N.A.	2	100.0	10	66.7
Educational Administration	1	100.0	3	100.0	2	66.7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1	100.0	7	87.5
Other Educational	N.A.	N.A.	13	100.0	N.A.	N.A.	0	0.0	2	66.7	N.A.	N.A.	3	100.0	18	85.7
ALL EDUCATIONAL	2	40.0	19	100.0	3	60.0	2	40.0	3	75.0	N.A.	N.A.	6	100.0	35	79.5
FINE AND APPLIED ARTS	N.A.	N.A.	3	100.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	3	100.0
History	N.A.	N.A.	13	92.9	N.A.	N.A.	N.A.	N.A.	0	0.0	0	0.0	0	0.0	13	68.4
English	1	100.0	8	47.1	0	0.0	N.A.	N.A.	N.A.	N.A.	0	0.0	0	0.0	9	39.1
Philosophy	N.A.	N.A.	4	100.0	0	0.0	N.A.	N.A.	1	50.0	N.A.	N.A.	1	50.0	6	66.7
Other Humanities	0	0.0	11	91.7	0	0.0	N.A.	N.A.	0	0.0	0	0.0	2	40.0	13	54.2
ALL HUMANITIES	1	50.0	36	76.6	0	0.0	N.A.	N.A.	1	16.7	0	0.0	3	33.3	41	54.7
Anthropology	N.A.	N.A.	6	100.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	6	100.0
Business Administration	N.A.	N.A.	6	85.7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0	0.0	N.A.	N.A.	6	75.0
Economics	0	0.0	7	87.5	N.A.	N.A.	N.A.	N.A.	4	57.1	N.A.	N.A.	N.A.	N.A.	11	68.8
Geography	1	100.0	9	100.0	N.A.	N.A.	N.A.	N.A.	0	0.0	N.A.	N.A.	N.A.	N.A.	10	90.9
Political Science	N.A.	N.A.	13	86.7	0	0.0	N.A.	N.A.	0	0.0	N.A.	N.A.	0	0.0	13	72.2
Psychology	2	66.7	18	95.7	5	83.3	22	84.6	5	83.3	2	40.0	N.A.	N.A.	54	80.6
Sociology	N.A.	N.A.	14	93.3	N.A.	N.A.	1	100.0	1	50.0	N.A.	N.A.	N.A.	N.A.	16	88.9
Other Social Sciences	0	0.0	8	72.7	N.A.	N.A.	N.A.	N.A.	2	40.0	N.A.	N.A.	2	100.0	12	63.2
ALL SOCIAL SCIENCES	3	50.0	81	88.0	5	71.4	23	85.2	12	54.5	2	33.3	2	66.7	128	78.5
Agriculture	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1	50.0	0	0.0	N.A.	N.A.	1	33.3
Biochemistry	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	0	0.0	1	100.0	N.A.	N.A.	N.A.	N.A.	1	50.0
Biology	1	100.0	1	100.0	0	0.0	N.A.	N.A.	4	80.0	N.A.	N.A.	N.A.	N.A.	6	75.0
Botany	1	100.0	2	100.0	N.A.	N.A.	N.A.	N.A.	2	100.0	N.A.	N.A.	N.A.	N.A.	5	100.0
Zoology	1	50.0	1	100.0	N.A.	N.A.	N.A.	N.A.	0	0.0	N.A.	N.A.	N.A.	N.A.	2	50.0
Other Agr. and Bio. Sciences	1	100.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1	100.0	
ALL AGR. AND BIO. SCIENCES	4	80.0	4	100.0	0	0.0	0	0.0	8	72.7	0	0.0	N.A.	N.A.	16	69.6
Chemical Engineering	0	0.0	1	100.0	1	100.0	N.A.	N.A.	1	100.0	5	71.4	N.A.	N.A.	8	72.7
Electrical Engineering	N.A.	N.A.	2	100.0	N.A.	N.A.	0	0.0	1	33.3	3	75.0	N.A.	N.A.	6	60.0
Mechanical Engineering	N.A.	N.A.	1	100.0	N.A.	N.A.	N.A.	N.A.	2	66.7	N.A.	N.A.	0	0.0	3	60.0
Other Eng. and App. Sci.	1	50.0	2	50.0	N.A.	N.A.	1	100.0	0	0.0	4	50.0	N.A.	N.A.	8	50.0
ALL ENG. AND APP. SCI.	1	33.3	6	75.0	1	100.0	1	50.0	4	50.0	12	63.2	0	0.0	25	59.5
HEALTH	3	100.0	8	88.9	N.A.	N.A.	2	66.7	3	75.0	1	100.0	N.A.	N.A.	17	85.0
Computer Science	N.A.	N.A.	5	100.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	5	100.0
Mathematics	N.A.	N.A.	1	25.0	0	0.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1	20.0
Chemistry	1	12.5	4	66.7	0	0.0	1	100.0	3	50.0	2	18.2	N.A.	N.A.	11	32.4
Geology	N.A.	N.A.	1	25.0	N.A.	N.A.	N.A.	N.A.	5	71.4	2	100.0	N.A.	N.A.	8	61.5
Physics	6	85.7	3	75.0	N.A.	N.A.	N.A.	N.A.	4	66.7	2	50.0	0	0.0	15	65.2
Other Math. and Phy. Sci.	N.A.	N.A.	2	100.0	N.A.	N.A.	N.A.	N.A.	2	66.7	1	100.0	1	100.0	6	85.7
ALL MATH. AND PHY. SCI.	7	46.7	16	64.0	0	0.0	1	100.0	14	63.6	7	38.9	1	33.3	46	52.9
ALL DISCIPLINES	21	53.8	173	83.6	9	37.5	29	74.4	45	58.4	22	44.9	12	54.5	311	68.1

TABLE D-2

SUITABILITY OF CURRENT EMPLOYMENT: "To what extent do you feel that your current employment is suitable for someone with your level of education?"

Number and Percentage responding "Definitely Suitable" by discipline and employment sector
(Residing In Canada)

	<u>University Teachers</u>		<u>Non-University Teachers</u>		<u>Total</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Education	19	100.0	16	64.0	35	79.5
Fine and Applied Arts	3	100.0	N.A.		3	100.0
Humanities	36	76.6	5	17.9	41	54.7
Social Sciences	81	88.0	47	66.2	128	78.5
Agricultural and Biological Sciences	4	100.0	12	63.2	16	69.6
English and Applied Sciences	6	75.0	19	55.9	25	59.5
Health	8	88.9	9	81.8	17	85.0
Mathematics and Physical Sciences	16	64.0	30	48.4	46	52.9
All Disciplines	173	83.6	138	55.2	311	68.1

APPENDIX E

EARNINGS OF PH.D. RESPONDENTS

TABLE E-1

CURRENT INCOME OF PH.D. GRADUATES WORKING FULL-TIME
AND RESIDING IN CANADA

By Employment Sector and Sex

INCOME RANGE	EMPLOYMENT SECTOR																										
	University Research			University Teaching			Other Educational Level			Health Care			Government			Industry			Self-Employed			Other			Total		
	No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%		No.	%	
Less than \$10,000	M	0	0.0	1	0.6	1	7.1	1	4.0	0	0.0	1	2.2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	1.1	0	0.0
	F	1	10.0	0	0.0	1	14.3	0	0.0	1	16.7	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0	4	5.8	0	0.0
	T	1	2.9	1	0.5	2	9.5	1	2.8	1	1.3	1	2.1	1	14.3	1	14.3	0	0.0	0	0.0	0	0.0	8	1.9	0	0.0
\$10,000 - \$14,999	M	14	56.0	7	4.5	0	0.0	1	4.0	1	1.4	2	4.3	0	0.0	0	0.0	1	9.1	1	9.1	26	7.3	0	0.0	0	0.0
	F	3	30.0	2	7.1	1	14.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	33.3	1	33.3	7	10.1	0	0.0	0	0.0
	T	17	48.6	9	4.9	1	4.8	1	2.8	1	1.3	2	4.2	0	0.0	0	0.0	2	14.3	2	14.3	33	7.8	0	0.0	0	0.0
\$15,000 - \$19,999	M	4	16.0	37	23.6	2	14.3	2	8.0	13	18.3	14	30.4	1	20.0	1	20.0	5	45.5	5	45.5	78	22.0	1	14.3	7	10.1
	F	5	50.0	15	53.6	1	14.3	2	18.2	1	16.7	0	0.0	0	0.0	0	0.0	2	66.7	2	66.7	26	37.7	0	0.0	0	0.0
	T	9	25.7	52	28.1	3	14.3	4	11.1	14	18.2	14	29.2	1	14.3	1	14.3	7	50.0	7	50.0	104	24.6	0	0.0	0	0.0
\$20,000 - \$24,999	M	4	16.0	75	47.8	4	28.6	10	40.0	32	45.1	12	26.1	0	0.0	0	0.0	2	18.2	2	18.2	139	39.3	0	0.0	0	0.0
	F	1	10.0	9	32.1	1	14.3	6	54.5	2	33.3	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	19	27.5	0	0.0	0	0.0
	T	5	14.3	84	45.4	5	23.8	16	44.4	34	44.2	12	25.0	0	0.0	0	0.0	2	14.3	2	14.3	158	37.4	0	0.0	0	0.0
\$25,000 - \$29,999	M	1	4.0	21	13.4	5	35.7	9	36.0	12	16.9	9	19.6	0	0.0	0	0.0	3	27.3	3	27.3	60	16.9	0	0.0	0	0.0
	F	0	0.0	1	3.6	3	42.9	3	27.3	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	9	13.0	0	0.0	0	0.0
	T	1	2.9	22	11.9	8	38.1	12	33.3	12	15.6	11	22.9	0	0.0	0	0.0	3	21.4	3	21.4	69	16.3	0	0.0	0	0.0
\$30,000 - \$34,999	M	1	4.0	7	4.5	1	7.1	2	8.0	8	11.3	4	8.7	0	0.0	0	0.0	0	0.0	0	0.0	23	6.5	0	0.0	0	0.0
	F	0	0.0	1	3.6	0	0.0	0	0.0	2	33.3	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	4	5.8	0	0.0	0	0.0
	T	1	2.9	8	4.3	1	4.8	2	5.6	10	13.0	4	8.3	1	14.3	1	14.3	0	0.0	0	0.0	27	6.4	0	0.0	0	0.0
Equal to or greater than \$35,000	M	0	0.0	6	3.8	1	7.1	0	0.0	5	7.0	2	4.3	4	80.0	4	80.0	0	0.0	0	0.0	18	5.1	0	0.0	0	0.0
	F	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	T	0	0.0	6	3.2	1	4.8	0	0.0	5	6.5	2	4.2	4	57.1	4	57.1	0	0.0	0	0.0	18	3	0	0.0	0	0.0
Not reported	M	1	4.0	3	1.9	0	0.0	0	0.0	0	0.0	2	4.3	0	0.0	0	0.0	0	0.0	0	0.0	6	1.7	0	0.0	0	0.0
	F	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	T	1	2.9	3	1.6	0	0.0	0	0.0	0	0.0	2	4.2	0	0.0	0	0.0	0	0.0	0	0.0	6	1.4	0	0.0	0	0.0
Total	M	25	100.0	157	100.0	14	100.0	25	100.0	71	100.0	46	100.0	5	100.0	5	100.0	11	100.0	11	100.0	354	100.0	0	0.0	0	0.0
	F	10	100.0	28	100.0	7	100.0	11	100.0	6	100.0	2	100.0	2	100.0	2	100.0	3	100.0	3	100.0	69	100.0	0	0.0	0	0.0
	T	35	100.0	185	100.0	21	100.0	36	100.0	77	100.0	48	100.0	7	100.0	7	100.0	14	100.0	14	100.0	423	100.0	0	0.0	0	0.0

TABLE E-2

Number and Percentage of PH.D. GRADUATES
WHO ARE CURRENTLY EARNING LESS THAN
\$20,000 PER YEAR by Discipline and Sex

(Full-Time Workers Residing in Canada)

<u>DISCIPLINE</u>	<u>Male</u>		<u>Female</u>		<u>Total</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Education	5	17.9	5	41.7	10	25.0
Fine and Applied Arts	1	50.0	1	100.0	2	66.7
Humanities	16	39.0	12	63.2	28	46.7
Social Sciences	20	15.6	9	36.0	29	19.0
Agriculture and Biological Sciences	13	72.2	4	80.0	17	73.9
Engineering and Applied Sciences	8	20.0	1	50.0	9	21.4
Health	3	18.8	2	100.0	5	27.8
Mathematics and Physical Sciences	42	51.9	3	100.0	45	53.5
Total	108	30.5	37	53.6	145	34.3



Education, Science and Culture Division

SURVEY OF 1976 DOCTORAL DEGREE RECIPIENTS
(français au verso)

AUTHORITY: Statistics Act, Statutes of Canada 1970-71-72, Chapter 15
and applicable provincial statutes and regulations.

FEDERAL PROVINCIAL AGREEMENT TO SHARE INFORMATION

This survey is being conducted by Statistics Canada in co-operation with the provincial departments responsible for university education. It is being conducted to obtain data about the educational background and the employment experiences and aspirations of graduates who obtained their Ph.D. or equivalent earned doctoral degrees from Canadian universities in 1976.

The survey is conducted under the provisions of the Statistics Act, Section 11. Data reported may be made available to the department responsible for university education in the province where the degree was earned unless a respondent objects in writing to the Chief Statistician of Canada.

INSTRUCTIONS FOR COMPLETING THE QUESTIONNAIRE

Please answer all applicable questions by placing an "x" in the appropriate check box ☒. If a write-in response is required, please print to ensure that your answer is legible. Do not write in shaded boxes.

Space is provided at the bottom of every page for comments or information if you feel it is necessary to clarify any of your responses.

When you have completed the questionnaire, please return it to Statistics Canada. A return envelope is enclosed for your convenience.

1. Did you complete the requirements for or obtain a Ph.D. or equivalent earned doctoral degree from a Canadian university in 1976?

Yes ☐ ⁰⁰⁵1 Go to Question 2

No ☐ 2 Do not answer any further questions.
Return the questionnaire using the enclosed envelope.
Thank you for your co-operation.

2. UNIVERSITY EDUCATION AND QUALIFICATIONS

A. List all university degrees, certificates and diplomas you have earned in the order in which they were obtained, starting with the first one you received.

Degree title (abbreviated)	Major field of study	Year study started	Year qualification obtained	Institution-awarding qualification	Country (if not Canada)
Example: (i) B.Sc. (ii) M.Sc. (iii) Ph.D.	Chemistry Physics Physics	1955 1960 1972	1959 1962 1976	Queen's Oxford U. of Alberta	England
(i)					
(ii)					
(iii)					
(iv)					
(v)					
(vi)					
(vii)					

B. What was the sub-specialty within the field of study recorded in 2A for your Ph.D. program?

OFFICE USE

006		007		008		009	
010		011		012		013	
014		015		016		017	
018		019		020		021	
022		023		024		025	
026		027		028		029	
030		031		032		033	

3. DURATION OF STUDY

For how many months were you enrolled at the university in your doctoral program?

(i) On a full-time basis

034

(ii) On a part-time basis

035

4. SOURCE OF FINANCIAL SUPPORT

A. Which of the following sources of financial support did you use to meet the total costs (living expenses, academic fees, etc.) incurred in earning your doctoral degree? (Check all that apply)

- (1) University fellowship or scholarship 036 ☐ 1
- (3) Academic employment including assistantship 038 ☐ 1
- (5) Employer contributions 040 ☐ 1
- (7) Spouse's earnings 042 ☐ 1
- (9) Other (savings, etc.) 044 ☐ 1

- (2) Non-university fellowship or scholarship 037 ☐
- (4) Non-academic jobs 039 ☐
- (6) Loans 041 ☐
- (8) Other family support 043 ☐

B. Identify the two sources which provided you with the most financial support by inserting the appropriate number (1 through 9) from question 4A above.

(i) Source providing largest amount of financial support 045

(ii) Source providing second largest amount of financial support 046

C. If you received non-university fellowship or scholarship assistance at any time during the course of your doctoral studies indicate the granting agency agencies. (Check more than one if necessary.)

- (i) Canada Council 047 ☐ 1
- (iii) Medical Research Council 049 ☐ 1
- (v) Provincial Government Awards 051 ☐ 1

- (ii) Canadian International Development Agency 048 ☐
- (iv) National Research Council 050 ☐
- (vi) Other (specify) 052 ☐

Comments:

MOTIVATION FOR DOCTORAL STUDY

To what extent was each of the factors listed below influential in making your decision to pursue a doctoral degree? Try to report your motivation as it was at the time you decided to pursue your doctoral degree.

		Very Influential	Considerable Influence	Some Influence	Not at all Influential
(i) Offer of financial support (fellowship, scholarship, assistantship, etc.)	053	<input type="checkbox"/> ¹	<input type="checkbox"/> ²	<input type="checkbox"/> ³	<input type="checkbox"/> ⁴
(ii) Expected improvement in future earnings.	054	<input type="checkbox"/> ¹	<input type="checkbox"/> ²	<input type="checkbox"/> ³	<input type="checkbox"/> ⁴
(iii) Strong interest in discipline of study.	055	<input type="checkbox"/> ¹	<input type="checkbox"/> ²	<input type="checkbox"/> ³	<input type="checkbox"/> ⁴
(iv) Doctoral degree considered essential to employment aspirations.	056	<input type="checkbox"/> ¹	<input type="checkbox"/> ²	<input type="checkbox"/> ³	<input type="checkbox"/> ⁴
(v) Encouragement from university professors or professional colleagues	057	<input type="checkbox"/> ¹	<input type="checkbox"/> ²	<input type="checkbox"/> ³	<input type="checkbox"/> ⁴
(vi) Encouragement from family or friends	058	<input type="checkbox"/> ¹	<input type="checkbox"/> ²	<input type="checkbox"/> ³	<input type="checkbox"/> ⁴
(vii) Other _____ (describe briefly)	059	<input type="checkbox"/> ¹	<input type="checkbox"/> ²	<input type="checkbox"/> ³	<input type="checkbox"/> ⁴

SATISFACTION WITH DOCTORAL PROGRAM

A. Considering all aspects of your doctoral program, how satisfied are you with it?

Very Satisfied ☐¹ Satisfied ☐² Dissatisfied ☐³ Very Dissatisfied ☐⁴

060

B. How satisfied are you with the length of time it took for you to earn your doctoral degree?

Very Satisfied ☐¹ Satisfied ☐² Dissatisfied ☐³ Very Dissatisfied ☐⁴

061

EMPLOYMENT ASPIRATIONS

A. At the time of registering for your doctoral program, what type of employment did you want to obtain after completing requirements for the degree? (Check one only)

(i) University appointment ☐¹ 062

(ii) Research appointment outside university. ☐²

(iii) Other appointment outside university ☐³

(iv) No specific aspirations ☐⁴

B. Have your employment aspirations changed since you commenced your doctoral studies? (Check one only)

Yes - before earning doctoral degree. ☐¹ 063

Yes - since earning doctoral degree. ☐² } Go to question 7C

No. ☐³ } Go to question 8

C. What are your current employment aspirations? (Check one only)

(i) University appointment. ☐¹ 064

(ii) Research appointment outside university. ☐²

(iii) Other appointment outside university ☐³

(iv) No specific aspirations ☐⁴

D. Why did you revise your employment aspirations? (Check the most important only)

(i) Available positions too scarce. ☐¹ 065

(ii) Did not really want that type of employment ☐²

(iii) Better opportunities became available ☐³

(iv) Unable to relocate ☐⁴

(v) Personal reasons ☐⁵

(vi) Other (specify) _____ ☐⁶

Comments:

8. EMPLOYMENT DURING DOCTORAL PROGRAM

Were you employed at any time while you were registered in your doctoral program?
(Assistantships should be counted as employment)

066
Yes ☐ 1 Go to question 9
No ☐ 2 Go to question 10

9. Check the type of employment held at any time during the year, while registered for your doctoral program, and circle the year or years in which each type of employment was held.

Note: If employment was prior to 1971, enter the year.

YEAR(S) JOB HELD

On a
full-time basis

On a
part-time basis

- (a) ☐ Research assistantship
- (b) ☐ Teaching assistantship
- (c) ☐ University research appointment — other than (a) above
- (d) ☐ University teaching appointment — other than (b) above
- (e) ☐ Other university appointment (e.g. library supervision, residence proctoring).
- (f) ☐ Community College level appointment.
- (g) ☐ Elementary/secondary level appointment
- (h) ☐ Employment in a hospital, clinic or other organized health care unit.
- (i) ☐ Employment in a government department or agency (excluding hospital personnel)
- (j) ☐ Employment in industry and/or commerce
- (k) ☐ Other _____
please specify

067	76	75	74	73	72	71
068	76	75	74	73	72	71
069	76	75	74	73	72	71
070	76	75	74	73	72	71
071	76	75	74	73	72	71
072	76	75	74	73	72	71
073	76	75	74	73	72	71
074	76	75	74	73	72	71
075	76	75	74	73	72	71
076	76	75	74	73	72	71
077	76	75	74	73	72	71
078	76	75	74	73	72	71
079	76	75	74	73	72	71
080	76	75	74	73	72	71
081	76	75	74	73	72	71
082	76	75	74	73	72	71
083	76	75	74	73	72	71
084	76	75	74	73	72	71
085	76	75	74	73	72	71
086	76	75	74	73	72	71

10. EMPLOYMENT IN UNIVERSITY TEACHING AT ANY TIME PRIOR TO OBTAINING DOCTORAL DEGREE

If you were ever employed full-time in university teaching at any time prior to obtaining your doctoral degree, give the rank of your first and last position, the university at which each was held and the duration of the appointment. Otherwise go to question 11.

First full-time position

Last full-time position

Same as first full-time position 091

OR

092

Rank _____

087

088

Institution _____

Rank _____

093

Institution _____

Start date 089

month				year
	1	9		

Termination date 090
(if applicable)

month				year
	1	9		

Start date 094

month				ye
	1	9		

Termination date 095
(if applicable)

month				ye
	1	9		

Comments:

EMPLOYMENT SINCE RECEIPT OF DOCTORAL DEGREE

A. Have you been employed at any time since earning your doctoral degree? ⁰⁹⁶ Yes ☐ ¹ Go to question 11C
No ☐ ² Go to question 11B

B. Have you looked for employment for the period of time since receipt of your doctoral degree? ⁰⁹⁷ Yes ☐ ¹ Go to question 17
No ☐ ² Go to question 18

C. Answer the following questions with respect to the first employment you held since obtaining your doctoral degree and then with respect to your current employment. If you held or hold both full-time and part-time employment report for the full-time job.

	FIRST EMPLOYMENT		CURRENT EMPLOYMENT	
	First employment held after receipt of doctoral degree. (Note: this employment may have started prior to obtaining your doctorate)		Same as first employment ¹⁰⁹ <input type="checkbox"/> ¹ Go to question 12 Not currently employed <input type="checkbox"/> ² Go to question 15	
Type of appointment	⁰⁹⁸ Full-time <input type="checkbox"/> ¹ Part-time <input type="checkbox"/> ²		¹¹⁰ Full-time <input type="checkbox"/> ¹ Part-time <input type="checkbox"/> ²	
Employer (enter "self" if self-employed)	Name of firm or organization Department, Branch, Division		Name of firm or organization Department, Branch, Division	
Kind of business (give full description, e.g. drug manufacturing, federal government, road construction, management consulting, etc.)	⁰⁹⁹ <input type="checkbox"/>		¹¹¹ <input type="checkbox"/>	
Field of work in which you were engaged (e.g. chemical research, teaching history, bridge design)	¹⁰⁰ <input type="checkbox"/>		¹¹² <input type="checkbox"/>	
What work activities are related to your position? (Check as many as apply)	¹⁰¹ <input type="checkbox"/> ⁰ Research: basic, social or applied <input type="checkbox"/> ¹ Development: product, process or technical <input type="checkbox"/> ² Teaching and training - include student counselling <input type="checkbox"/> ³ Management or administration of research and development <input type="checkbox"/> ⁴ Other management or administration <input type="checkbox"/> ⁵ Report and technical writing, editing, information retrieval <input type="checkbox"/> ⁶ Statistical work: designing and conducting surveys, forecasting, analysis <input type="checkbox"/> ⁷ Consulting: professional, scientific, management <input type="checkbox"/> ⁸ Computer applications: programming, systems analysis <input type="checkbox"/> ⁹ Other (specify) _____		¹¹³ <input type="checkbox"/> ⁰ Research: basic, social or applied <input type="checkbox"/> ¹ Development: product, process or technical <input type="checkbox"/> ² Teaching and training - include student counselling <input type="checkbox"/> ³ Management or administration of research and development <input type="checkbox"/> ⁴ Other management or administration <input type="checkbox"/> ⁵ Report and technical writing, editing, information retrieval <input type="checkbox"/> ⁶ Statistical work: designing and conducting surveys, forecasting, analysis <input type="checkbox"/> ⁷ Consulting: professional, scientific, management <input type="checkbox"/> ⁸ Computer applications: programming, systems analysis <input type="checkbox"/> ⁹ Other (specify) _____	
Rank of these activities, in terms of time spent, your primary and secondary activities? (Enter appropriate code 0 to 9)	¹⁰² Primary <input type="checkbox"/> ¹⁰³ Secondary <input type="checkbox"/>		¹¹⁴ Primary <input type="checkbox"/> ¹¹⁵ Secondary <input type="checkbox"/>	
Director of your job (e.g. Director of Chemical Research, Assistant Professor, etc.)				
Place of work	City/town	¹⁰⁴ <input type="checkbox"/>	City/town	¹¹⁶ <input type="checkbox"/>
	Province (if Canada)	¹⁰⁵ <input type="checkbox"/>	Province (if Canada)	¹¹⁷ <input type="checkbox"/>
	Country (if not Canada)	¹⁰⁶ <input type="checkbox"/>	Country (if not Canada)	¹¹⁸ <input type="checkbox"/>
Duration of appointment	¹⁰⁷ <input type="checkbox"/> <input type="checkbox"/> month ¹⁹ <input type="checkbox"/> <input type="checkbox"/> year		¹¹⁹ <input type="checkbox"/> <input type="checkbox"/> month ¹⁹ <input type="checkbox"/> <input type="checkbox"/> year	
Duration of termination (applicable)	¹⁰⁸ <input type="checkbox"/> <input type="checkbox"/> month ¹⁹ <input type="checkbox"/> <input type="checkbox"/> year		If contractually limited: ¹²⁰ <input type="checkbox"/> <input type="checkbox"/> month ¹⁹ <input type="checkbox"/> <input type="checkbox"/> year	

12. To what extent do you feel that your current employment is suitable for someone with your level of education?	<table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Definitely suitable</td> <td style="width: 20%; text-align: right;">121 <input type="checkbox"/> 1</td> </tr> <tr> <td>Suitable in some respects.</td> <td style="text-align: right;"><input type="checkbox"/> 2</td> </tr> <tr> <td>Definitely not suitable</td> <td style="text-align: right;"><input type="checkbox"/> 3</td> </tr> </table>	Definitely suitable	121 <input type="checkbox"/> 1	Suitable in some respects.	<input type="checkbox"/> 2	Definitely not suitable	<input type="checkbox"/> 3
Definitely suitable	121 <input type="checkbox"/> 1						
Suitable in some respects.	<input type="checkbox"/> 2						
Definitely not suitable	<input type="checkbox"/> 3						

13. At your present rate of income from your current employment, what would be your income on an annual basis? Do not include income from sources other than the current employment reported in question 11C. Individuals who are self-employed should report anticipated net annual income before taxes.	<table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Income range</td> <td style="width: 20%; text-align: right;">122</td> </tr> <tr> <td>Less than 10,000</td> <td style="text-align: right;"><input type="checkbox"/> 1</td> </tr> <tr> <td>10,000 - 14,999</td> <td style="text-align: right;"><input type="checkbox"/> 2</td> </tr> <tr> <td>15,000 - 19,999</td> <td style="text-align: right;"><input type="checkbox"/> 3</td> </tr> <tr> <td>20,000 - 24,999</td> <td style="text-align: right;"><input type="checkbox"/> 4</td> </tr> <tr> <td>25,000 - 29,999</td> <td style="text-align: right;"><input type="checkbox"/> 5</td> </tr> <tr> <td>30,000 - 34,999</td> <td style="text-align: right;"><input type="checkbox"/> 6</td> </tr> <tr> <td>35,000 or more</td> <td style="text-align: right;"><input type="checkbox"/> 7</td> </tr> </table>	Income range	122	Less than 10,000	<input type="checkbox"/> 1	10,000 - 14,999	<input type="checkbox"/> 2	15,000 - 19,999	<input type="checkbox"/> 3	20,000 - 24,999	<input type="checkbox"/> 4	25,000 - 29,999	<input type="checkbox"/> 5	30,000 - 34,999	<input type="checkbox"/> 6	35,000 or more	<input type="checkbox"/> 7
Income range	122																
Less than 10,000	<input type="checkbox"/> 1																
10,000 - 14,999	<input type="checkbox"/> 2																
15,000 - 19,999	<input type="checkbox"/> 3																
20,000 - 24,999	<input type="checkbox"/> 4																
25,000 - 29,999	<input type="checkbox"/> 5																
30,000 - 34,999	<input type="checkbox"/> 6																
35,000 or more	<input type="checkbox"/> 7																

14. Express the degree of satisfaction or dissatisfaction you feel concerning various aspects of your current job.						
	<table border="0" style="width: 100%;"> <tr> <td style="width: 20%;"></td> <td style="width: 20%; text-align: center;">Very satisfied</td> <td style="width: 20%; text-align: center;">Satisfied</td> <td style="width: 20%; text-align: center;">Somewhat dissatisfied</td> <td style="width: 20%; text-align: center;">Very dissatisfied</td> </tr> </table>		Very satisfied	Satisfied	Somewhat dissatisfied	Very dissatisfied
	Very satisfied	Satisfied	Somewhat dissatisfied	Very dissatisfied		
(i) Your overall feeling towards your job 123	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
(ii) Your salary/earnings 124	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
(iii) The status/rank of your position 125	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
(iv) The influence you have on decisions. 126	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
(v) The educational level of your colleagues 127	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
(vi) Promotion/career prospects of the job. 128	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
(vii) Opportunity to use specialized knowledge gained in doctoral study 129	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
(viii) Opportunities for research 130	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
(ix) Opportunities for keeping up with developments in doctoral field of study 131	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
(x) Job security 132	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			
(xi) Challenge of your job 133	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 1</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 2</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 3</td> <td style="width: 20%; text-align: center;"><input type="checkbox"/> 4</td> <td style="width: 20%;"></td> </tr> </table>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4			

15. After completing your doctoral program did you return to the same employer you had prior to commencing the program?	<table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Yes</td> <td style="width: 20%; text-align: right;">134 <input type="checkbox"/> 1 Go to question 16</td> </tr> <tr> <td>No</td> <td style="text-align: right;"><input type="checkbox"/> 2 Go to question 17</td> </tr> <tr> <td>Not applicable (not employed previous to doctoral program)</td> <td style="text-align: right;"><input type="checkbox"/> 0 Go to question 17</td> </tr> </table>	Yes	134 <input type="checkbox"/> 1 Go to question 16	No	<input type="checkbox"/> 2 Go to question 17	Not applicable (not employed previous to doctoral program)	<input type="checkbox"/> 0 Go to question 17
Yes	134 <input type="checkbox"/> 1 Go to question 16						
No	<input type="checkbox"/> 2 Go to question 17						
Not applicable (not employed previous to doctoral program)	<input type="checkbox"/> 0 Go to question 17						

16. Have you looked for another position at any time since returning to your previous employer?	<table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Yes</td> <td style="width: 20%; text-align: right;">135 <input type="checkbox"/> 1 Go to question 17</td> </tr> <tr> <td>No</td> <td style="text-align: right;"><input type="checkbox"/> 2 Go to question 18</td> </tr> </table>	Yes	135 <input type="checkbox"/> 1 Go to question 17	No	<input type="checkbox"/> 2 Go to question 18
Yes	135 <input type="checkbox"/> 1 Go to question 17				
No	<input type="checkbox"/> 2 Go to question 18				

Comments:

Which of the following techniques have you used to look for employment for the period of time following your doctoral studies? (Check as many as apply.)	Methods used	Check if job offer was received as a result of each method used
(i) Received assistance or referrals from professors	136 <input type="checkbox"/> 1	146 <input type="checkbox"/> 1
(ii) Used university placement office	137 <input type="checkbox"/> 1	147 <input type="checkbox"/> 1
(iii) Answered advertisements in professional journals	138 <input type="checkbox"/> 1	148 <input type="checkbox"/> 1
(iv) Answered advertisements in national or international newspapers/periodicals	139 <input type="checkbox"/> 1	149 <input type="checkbox"/> 1
(v) Made application through government recruitment programs at university	140 <input type="checkbox"/> 1	150 <input type="checkbox"/> 1
(vi) Contacted university departments directly	141 <input type="checkbox"/> 1	151 <input type="checkbox"/> 1
(vii) Contacted government departments directly	142 <input type="checkbox"/> 1	152 <input type="checkbox"/> 1
(viii) Contacted businesses or industries directly	143 <input type="checkbox"/> 1	153 <input type="checkbox"/> 1
(ix) Received assistance or referrals from contacts at conferences, learned societies, etc.	144 <input type="checkbox"/> 1	154 <input type="checkbox"/> 1
(x) Other (specify) _____	145 <input type="checkbox"/> 1	155 <input type="checkbox"/> 1

If you are currently employed, go to Question 19; otherwise continue

A. Is your non-employment voluntary? 156

Yes ☐ 1

No ☐ 2

B. What is the main reason for your non-employment? (Check one only.) 157

(i) Enjoying a period of vacation/leisure/travel or rest ☐ 1

(ii) Attending to home/household duties ☐ 2

(iii) Unable to find a university appointment in my field ☐ 3

(iv) Unable to find work in my field outside the university ☐ 4

(v) Unable to find any work ☐ 5

(vi) Illness, accident or health reasons ☐ 6

(vii) Other: please specify _____ ☐ 7

PERSONAL CHARACTERISTICS			
A. Sex:	158 Male <input type="checkbox"/> 1 Female <input type="checkbox"/> 2	E. Country of birth:	
B. Year of birth	159 <input type="text" value="1"/> <input type="text" value="9"/> <input type="text"/> <input type="text"/>	Province (if Canada) _____	162 <input type="text"/> <input type="text"/> <input type="text"/>
C. Mother tongue: (language first spoken and still understood)	160 English <input type="checkbox"/> 1 French <input type="checkbox"/> 2 Other <input type="checkbox"/> 3 (specify) _____	Country (if not Canada) _____	163 <input type="text"/> <input type="text"/> <input type="text"/>
D. Were you married at the time of registration for your doctoral program?	161 Yes <input type="checkbox"/> 1 No <input type="checkbox"/> 2	F. Country of current citizenship:	
		Canada	164 <input type="checkbox"/> 1
		Other country _____	165 <input type="text"/> <input type="text"/> <input type="text"/>
		(please specify and indicate visa status in Canada below)	166
		a) Not currently residing in Canada	<input type="checkbox"/> 1
		b) Work permit	<input type="checkbox"/> 2
		c) Landed immigrant	<input type="checkbox"/> 3
		Year immigrant status obtained	167 <input type="text" value="1"/> <input type="text" value="9"/> <input type="text"/> <input type="text"/>
		d) Other temporary status in Canada (specify type of visa)	<input type="checkbox"/> 4
		_____	Specify type of visa

ments:

AUTHORIZATION FOR DATA RELEASE

The Councils listed below have requested data tapes from this survey for research purposes and have agreed to apply rules of confidentiality similar to those of the Statistics Act in release of their research reports. However, Statistics Canada will not release such a micro data tape containing your information unless you, the respondent, give authorization for such release.

Please indicate, therefore, which of the Councils, if any, you authorize to have access to your data file by placing your initials in the space provided beside each name.

Medical Research Council	168 <input type="checkbox"/>
Natural Science and Engineering Research Council (formerly part of the National Research Council)	169 <input type="checkbox"/>
Social Sciences and Humanities Research Council (formerly part of the Canada Council)	170 <input type="checkbox"/>

Comments:

